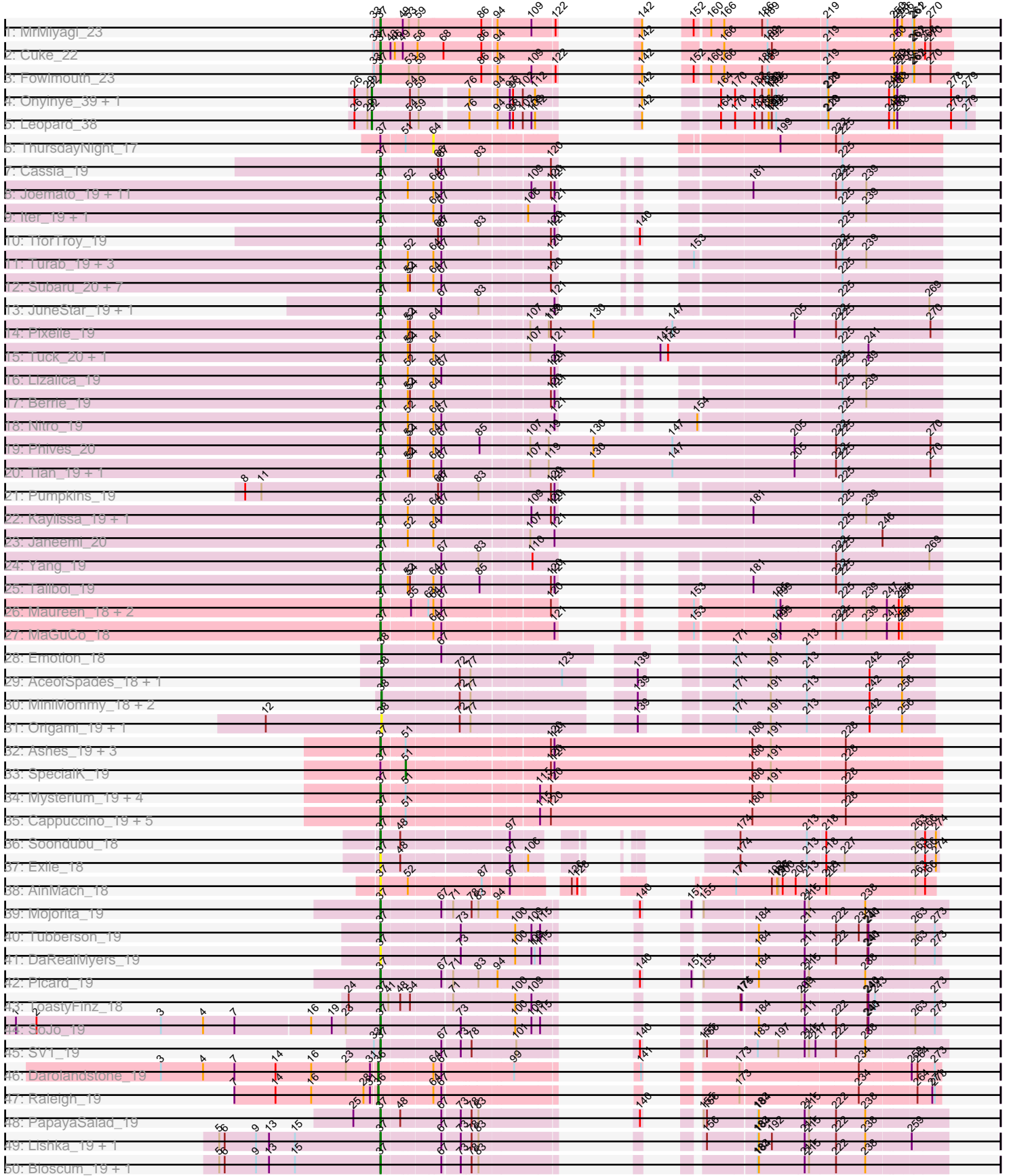
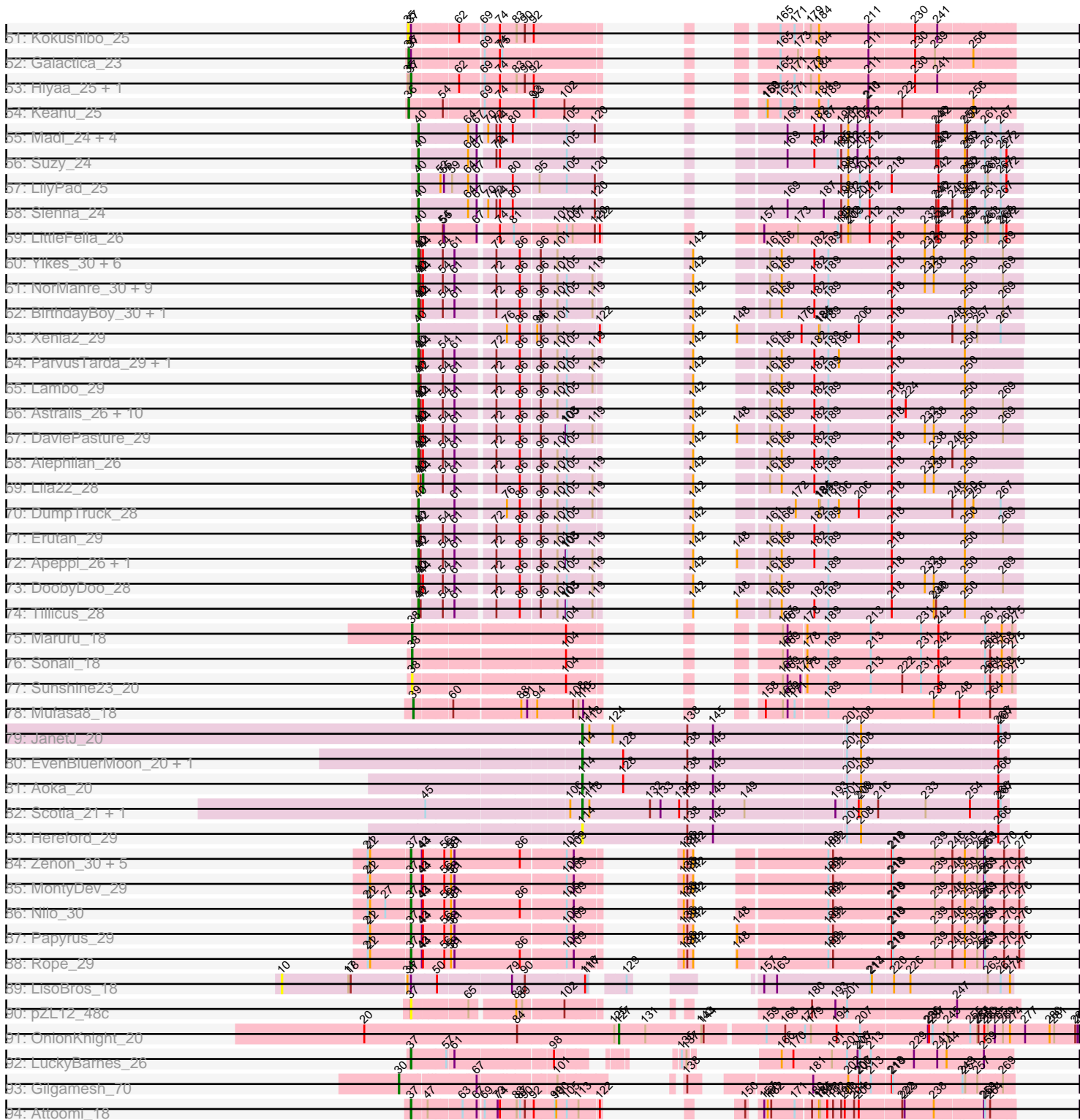


Pham 294455



Pham 294455



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 294455 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 294455 has 181 members, 31 are drafts.

Phages represented in each track:

- Track 1 : MrMiyagi\_23
- Track 2 : Cuke\_22
- Track 3 : Fowlmouth\_23
- Track 4 : Onyinye\_39, Aikoy\_38
- Track 5 : Leopard\_38
- Track 6 : ThursdayNight\_17
- Track 7 : Cassia\_19
- Track 8 : Joemato\_19, AGrandiflora\_19, Lego\_19, YesChef\_19, Flutur\_19, Tutumahutu\_19, Tbone\_19, Warda\_19, Powerpuff\_19, Cyan\_19, Mudpuppy\_19, Simpson\_21
- Track 9 : Iter\_19, Ascela\_19
- Track 10 : TforTroy\_19
- Track 11 : Turab\_19, Adumb2043\_19, Amploria\_19, AEgle\_19
- Track 12 : Subaru\_20, Elezi\_19, Eraser\_19, London\_19, Skelbel\_20, Jstan\_20, Niobe\_19, Asa16\_19
- Track 13 : JuneStar\_19, Schaffner\_19
- Track 14 : Pixelle\_19
- Track 15 : Tuck\_20, Community\_19
- Track 16 : Lizalica\_19
- Track 17 : Berrie\_19
- Track 18 : Nitro\_19
- Track 19 : Phives\_20
- Track 20 : Tian\_19, Amyev\_19
- Track 21 : Pumpkins\_19
- Track 22 : Kaylissa\_19, JohnDoe\_19
- Track 23 : Janeemi\_20
- Track 24 : Yang\_19
- Track 25 : Tallboi\_19
- Track 26 : Maureen\_18, IUFootball\_18, Liebe\_18
- Track 27 : MaGuCo\_18
- Track 28 : Emotion\_18
- Track 29 : AceofSpades\_18, VroomVroom\_18
- Track 30 : MiniMommy\_18, JasmineDragon\_18, ShakeltOph\_18

- Track 31 : Origami\_19, LadyAstra\_19
- Track 32 : Ashes\_19, RockScotty\_19, Halsey\_19, Moss\_19
- Track 33 : SpecialK\_19
- Track 34 : Mysterium\_19, Gumpizza\_19, Beaupre\_19, Stuu\_19, Giorgio\_19
- Track 35 : Cappuccino\_19, Kalimba\_19, Donkey\_19, Sabourin\_19, Gambol\_19, Sooty\_19
- Track 36 : Soondubu\_18
- Track 37 : Exile\_18
- Track 38 : AinMach\_18
- Track 39 : Mojorita\_19
- Track 40 : Tubberson\_19
- Track 41 : DaRealMyers\_19
- Track 42 : Picard\_19
- Track 43 : ToastyFinz\_18
- Track 44 : SoJo\_19
- Track 45 : SV1\_19
- Track 46 : Darolandstone\_19
- Track 47 : Raleigh\_19
- Track 48 : PapayaSalad\_19
- Track 49 : Lishka\_19, Austintatious\_19
- Track 50 : Bioscum\_19, Ididsumtinwong\_19
- Track 51 : Kokushibo\_25
- Track 52 : Galactica\_23
- Track 53 : Hiyaa\_25, Spocter\_25
- Track 54 : Keanu\_25
- Track 55 : Madi\_24, BiteSize\_24, Terapin\_24, Beyoncage\_24, Djokovic\_24
- Track 56 : Suzy\_24
- Track 57 : LilyPad\_25
- Track 58 : Sienna\_24
- Track 59 : LittleFella\_26
- Track 60 : Yikes\_30, OtterstedtS21\_29, MoiGyank\_31, Sampudon\_29, Jalebi\_28, Rota\_28, LavAbarElk\_27
- Track 61 : NorManre\_30, Sadboi\_29, Fulcrum\_30, Gibbin\_30, Mima20\_27, Patos\_30, GretellLyn\_29, GOATification\_30, Ranch\_29, Rukungu\_29
- Track 62 : BirthdayBoy\_30, Zany\_28
- Track 63 : Xenia2\_29
- Track 64 : ParvusTarda\_29, Wojtek\_28
- Track 65 : Lambo\_29
- Track 66 : Astralis\_26, Alyssamiracle\_29, Avian\_26, Genamy16\_29, Rumi\_28, Charminar\_27, Jamemuya19\_26, RazorC\_27, Stormer\_28, NovaSharks\_28, Riduram\_28
- Track 67 : DaviePasture\_29
- Track 68 : Alephilan\_26
- Track 69 : Lila22\_28
- Track 70 : DumpTruck\_28
- Track 71 : Erutan\_29
- Track 72 : Apeppi\_26, LuckyLeo\_28
- Track 73 : DoobyDoo\_28
- Track 74 : Tillicus\_28
- Track 75 : Maruru\_18
- Track 76 : Sonali\_18
- Track 77 : Sunshine23\_20
- Track 78 : Mufasa8\_18

- Track 79 : JanetJ\_20
- Track 80 : EvenBluerMoon\_20, PrairieDogTown\_20
- Track 81 : Aoka\_20
- Track 82 : Scotia\_21, NoSwimming\_21
- Track 83 : Hereford\_29
- Track 84 : Zenon\_30, Yelo\_29, Send513\_29, Candle\_29, Weiss13\_29, Riparian\_29
- Track 85 : MontyDev\_29
- Track 86 : Nilo\_30
- Track 87 : Papyrus\_29
- Track 88 : Rope\_29
- Track 89 : LisoBros\_18
- Track 90 : pZL12\_48c
- Track 91 : OnionKnight\_20
- Track 92 : LuckyBarnes\_26
- Track 93 : Gilgamesh\_70
- Track 94 : Attoomi\_18

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

The start number called the most often in the published annotations is 37, it was called in 80 of the 150 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle\_19, AGrandiflora\_19, Adumb2043\_19, AinMach\_18, Amploria\_19, Amyev\_19, Asa16\_19, Ascela\_19, Ashes\_19, Attoomi\_18, Austintatious\_19, Beaupre\_19, Berrie\_19, Bioscum\_19, Candle\_29, Cappuccino\_19, Cassia\_19, Community\_19, Cuke\_22, Cyan\_19, DaRealMyers\_19, Donkey\_19, Elezi\_19, Eraser\_19, Exile\_18, Flutur\_19, Fowlmouth\_23, Gambol\_19, Giorgio\_19, Gumpizza\_19, Halsey\_19, Hiyaa\_25, IUFootball\_18, Ididsumtinwong\_19, Iter\_19, Janeemi\_20, Joemato\_19, JohnDoe\_19, Jstan\_20, JuneStar\_19, Kalimba\_19, Kaylissa\_19, Lego\_19, Liebe\_18, Lishka\_19, Lizalica\_19, London\_19, LuckyBarnes\_26, MaGuCo\_18, Maureen\_18, Mojorita\_19, MontyDev\_29, Moss\_19, MrMiyagi\_23, Mudpuppy\_19, Mysterium\_19, Nilo\_30, Niobe\_19, Nitro\_19, PapayaSalad\_19, Papyrus\_29, Phives\_20, Picard\_19, Pixelle\_19, Powerpuff\_19, Pumpkins\_19, Riparian\_29, RockScotty\_19, Rope\_29, SV1\_19, Sabourin\_19, Schaffner\_19, Send513\_29, Simpson\_21, Skelbel\_20, SoJo\_19, Soondubu\_18, Sooty\_19, Spocter\_25, Stuu\_19, Subaru\_20, Tallboi\_19, Tbone\_19, TforTroy\_19, Tian\_19, ToastyFinz\_18, Tubberson\_19, Tuck\_20, Turab\_19, Tutumahutu\_19, Warda\_19, Weiss13\_29, Yang\_19, Yelo\_29, YesChef\_19, Zenon\_30, pZL12\_48c,

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

- Galactica\_23, Kokushibo\_25, LisoBros\_18, SpecialK\_19, ThursdayNight\_17,

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

- AceofSpades\_18, Aikoy\_38, Alephilan\_26, Alyssamiracle\_29, Aoka\_20, Apeppi\_26, Astralis\_26, Avian\_26, Beyoncage\_24, BirthdayBoy\_30, BiteSize\_24, Charminar\_27, Darolandstone\_19, DaviePasture\_29, Djokovic\_24, DoobyDoo\_28, DumpTruck\_28, Emotion\_18, Erutan\_29, EvenBluerMoon\_20, Fulcrum\_30, GOATification\_30, Genamy16\_29, Gibbin\_30, Gilgamesh\_70, GretelLyn\_29, Hereford\_29, Jalebi\_28, Jamemuya19\_26, JanetJ\_20, JasmineDragon\_18, Keanu\_25, LadyAstra\_19,

Lambo\_29, LavAbarElk\_27, Leopard\_38, Lila22\_28, LilyPad\_25, LittleFella\_26, LuckyLeo\_28, Madi\_24, Maruru\_18, Mima20\_27, MiniMommy\_18, MoiGyank\_31, Mufasa8\_18, NoSwimming\_21, NorManre\_30, NovaSharks\_28, OnionKnight\_20, Onyinye\_39, Origami\_19, OtterstedtS21\_29, ParvusTarda\_29, Patos\_30, PrairieDogTown\_20, Raleigh\_19, Ranch\_29, RazorC\_27, Riduram\_28, Rota\_28, Rukungu\_29, Rumi\_28, Sadboi\_29, Sampudon\_29, Scotia\_21, ShakeltOph\_18, Sienna\_24, Sonali\_18, Stormer\_28, Sunshine23\_20, Suzy\_24, Terapin\_24, Tillicus\_28, VroomVroom\_18, Wojtek\_28, Xenia2\_29, Yikes\_30, Zany\_28,

### Summary by start number:

#### Start 10:

- Found in 1 of 181 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LisoBros\_18 (UNK),

#### Start 30:

- Found in 1 of 181 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gilgamesh\_70 (singleton),

#### Start 32:

- Found in 3 of 181 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 3 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy\_38 (AE), Leopard\_38 (AE), Onyinye\_39 (AE),

#### Start 35:

- Found in 3 of 181 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Kokushibo\_25 (BQ),

#### Start 36:

- Found in 4 of 181 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 4 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Darolandstone\_19 (BC2), Galactica\_23 (BQ), Keanu\_25 (BQ), Raleigh\_19 (BC2),

#### Start 37:

- Found in 102 of 181 ( 56.4% ) of genes in pham
- Manual Annotations of this start: 80 of 150
- Called 95.1% of time when present
- Phage (with cluster) where this start called: AEgle\_19 (AZ1), AGrandiflora\_19 (AZ1), Adumb2043\_19 (AZ1), AinMach\_18 (AZ7), Amploria\_19 (AZ1), Amyev\_19 (AZ1), Asa16\_19 (AZ1), Ascela\_19 (AZ1), Ashes\_19 (AZ5), Attoomi\_18 (singleton), Austintatious\_19 (BC3), Beaupre\_19 (AZ5), Berrie\_19 (AZ1), Bioscum\_19 (BC3), Candle\_29 (R), Cappuccino\_19 (AZ5), Cassia\_19 (AZ1), Community\_19 (AZ1), Cuke\_22 (AC), Cyan\_19 (AZ1), DaRealMyers\_19 (BC1), Donkey\_19 (AZ5), Elezi\_19

(AZ1), Eraser\_19 (AZ1), Exile\_18 (AZ6), Flutur\_19 (AZ), Fowlmouth\_23 (AC), Gambol\_19 (AZ5), Giorgio\_19 (AZ5), Gumpizza\_19 (AZ5), Halsey\_19 (AZ5), Hiyaa\_25 (BQ), IUFootball\_18 (AZ2), Ididsumtinwong\_19 (BC3), Iter\_19 (AZ1), Janeemi\_20 (AZ1), Joemato\_19 (AZ1), JohnDoe\_19 (AZ1), Jstan\_20 (AZ1), JuneStar\_19 (AZ1), Kalimba\_19 (AZ5), Kaylissa\_19 (AZ1), Lego\_19 (AZ1), Liebe\_18 (AZ2), Lishka\_19 (BC3), Lizalica\_19 (AZ1), London\_19 (AZ1), LuckyBarnes\_26 (singleton), MaGuCo\_18 (AZ2), Maureen\_18 (AZ2), Moajorita\_19 (BC1), MontyDev\_29 (R), Moss\_19 (AZ5), MrMiyagi\_23 (AC), Mudpuppy\_19 (AZ1), Mysterium\_19 (AZ5), Nilo\_30 (R), Niobe\_19 (AZ1), Nitro\_19 (AZ1), PapayaSalad\_19 (BC3), Papyrus\_29 (R), Phives\_20 (AZ1), Picard\_19 (BC1), Pixelle\_19 (AZ1), Powerpuff\_19 (AZ1), Pumpkins\_19 (AZ1), Riparian\_29 (R), RockScotty\_19 (AZ5), Rope\_29 (R), SV1\_19 (BC1), Sabourin\_19 (AZ5), Schaffner\_19 (AZ1), Send513\_29 (R), Simpson\_21 (AZ1), Skelbel\_20 (AZ1), SoJo\_19 (BC1), Soondubu\_18 (AZ6), Sooty\_19 (AZ5), Spocter\_25 (BQ), Stuu\_19 (AZ5), Subaru\_20 (AZ1), Tallboi\_19 (AZ1), Tbone\_19 (AZ1), TforTroy\_19 (AZ1), Tian\_19 (AZ1), ToastyFinz\_18 (BC1), Tubberson\_19 (BC1), Tuck\_20 (AZ1), Turab\_19 (AZ1), Tutumahutu\_19 (AZ1), Warda\_19 (AZ1), Weiss13\_29 (R), Yang\_19 (AZ1), Yelo\_29 (R), YesChef\_19 (AZ1), Zenon\_30 (R), pZL12\_48c (singleton),

#### Start 38:

- Found in 11 of 181 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 7 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AceofSpades\_18 (AZ4), Emotion\_18 (AZ4), JasmineDragon\_18 (AZ4), LadyAstra\_19 (AZ4), Maruru\_18 (FG), MiniMommy\_18 (AZ4), Origami\_19 (AZ4), ShakeltOph\_18 (AZ4), Sonali\_18 (FG), Sunshine23\_20 (FG), VroomVroom\_18 (AZ4),

#### Start 39:

- Found in 1 of 181 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mufasa8\_18 (FG),

#### Start 40:

- Found in 52 of 181 ( 28.7% ) of genes in pham
- Manual Annotations of this start: 45 of 150
- Called 98.1% of time when present
- Phage (with cluster) where this start called: Alephilan\_26 (DV), Alyssamiracle\_29 (DV), Apeppi\_26 (DV), Astralis\_26 (DV), Avian\_26 (DV), Beyoncage\_24 (DG1), BirthdayBoy\_30 (DV), BiteSize\_24 (DG1), Charminar\_27 (DV), DaviePasture\_29 (DV), Djokovic\_24 (DG1), DoobyDoo\_28 (DV), DumpTruck\_28 (DV), Erutan\_29 (DV), Fulcrum\_30 (DV), GOATification\_30 (DV), Genamy16\_29 (DV), Gibbin\_30 (DV), GretelLyn\_29 (DV), Jalebi\_28 (DV), Jamemuya19\_26 (DV), Lambo\_29 (DV), LavAbarElk\_27 (DV), LilyPad\_25 (DG1), LittleFella\_26 (DG2), LuckyLeo\_28 (DV), Madi\_24 (DG1), Mima20\_27 (DV), MoiGyank\_31 (DV), NorManre\_30 (DV), NovaSharks\_28 (DV), OtterstedtS21\_29 (DV), ParvusTarda\_29 (DV), Patos\_30 (DV), Ranch\_29 (DV), RazorC\_27 (DV), Riduram\_28 (DV), Rota\_28 (DV), Rukungu\_29 (DV), Rumi\_28 (DV), Sadboi\_29 (DV), Sampudon\_29 (DV), Sienna\_24 (DG1), Stormer\_28 (DV), Suzy\_24 (DG1), Terapin\_24 (DG1), Tillicus\_28 (DV), Wojtek\_28 (DV), Xenia2\_29 (DV), Yikes\_30 (DV), Zany\_28 (DV),

#### Start 44:

- Found in 46 of 181 ( 25.4% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 2.2% of time when present
- Phage (with cluster) where this start called: Lila22\_28 (DV),

Start 51:

- Found in 17 of 181 ( 9.4% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 5.9% of time when present
- Phage (with cluster) where this start called: SpecialK\_19 (AZ5),

Start 64:

- Found in 54 of 181 ( 29.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.9% of time when present
- Phage (with cluster) where this start called: ThursdayNight\_17 (AZ),

Start 114:

- Found in 7 of 181 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 6 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aoka\_20 (FO), EvenBluerMoon\_20 (FO), Hereford\_29 (FO), JanetJ\_20 (FO), NoSwimming\_21 (FO), PrairieDogTown\_20 (FO), Scotia\_21 (FO),

Start 127:

- Found in 1 of 181 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OnionKnight\_20 (singleton),

### **Summary by clusters:**

There are 21 clusters represented in this pham: singleton, UNK, AE, AZ7, BC2, AC, AZ, AZ5, DG2, AZ2, DG1, BQ, FG, DV, AZ1, R, BC3, AZ4, BC1, AZ6, FO,

Info for manual annotations of cluster AC:

- Start number 37 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 32 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AZ1:

- Start number 37 was manually annotated 34 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 37 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ4:

- Start number 38 was manually annotated 5 times for cluster AZ4.

Info for manual annotations of cluster AZ5:

- Start number 37 was manually annotated 15 times for cluster AZ5.
- Start number 51 was manually annotated 1 time for cluster AZ5.

Info for manual annotations of cluster AZ6:

- Start number 37 was manually annotated 1 time for cluster AZ6.

Info for manual annotations of cluster BC1:

- Start number 37 was manually annotated 6 times for cluster BC1.

Info for manual annotations of cluster BC2:

- Start number 36 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster BC3:

- Start number 37 was manually annotated 5 times for cluster BC3.

Info for manual annotations of cluster BQ:

- Start number 36 was manually annotated 2 times for cluster BQ.
- Start number 37 was manually annotated 2 times for cluster BQ.

Info for manual annotations of cluster DG1:

- Start number 40 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 40 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 40 was manually annotated 36 times for cluster DV.
- Start number 44 was manually annotated 1 time for cluster DV.

Info for manual annotations of cluster FG:

- Start number 38 was manually annotated 2 times for cluster FG.
- Start number 39 was manually annotated 1 time for cluster FG.

Info for manual annotations of cluster FO:

- Start number 114 was manually annotated 6 times for cluster FO.

Info for manual annotations of cluster R:

- Start number 37 was manually annotated 9 times for cluster R.

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

Gene: AEgle\_19 Start: 14931, Stop: 16052, Start Num: 37

Candidate Starts for AEgle\_19:

(Start: 37 @14931 has 80 MA's), (52, 14991), (64, 15054), (67, 15075), (120, 15339), (153, 15423), (222, 15783), (225, 15801), (239, 15861),

Gene: AGrandiflora\_19 Start: 14916, Stop: 16037, Start Num: 37

Candidate Starts for AGrandiflora\_19:

(Start: 37 @14916 has 80 MA's), (52, 14976), (64, 15039), (67, 15060), (109, 15273), (120, 15324), (121, 15330), (181, 15552), (222, 15768), (225, 15786), (239, 15846),

Gene: AceofSpades\_18 Start: 13087, Stop: 14322, Start Num: 38

Candidate Starts for AceofSpades\_18:

(Start: 38 @13087 has 7 MA's), (72, 13282), (77, 13306), (123, 13528), (139, 13657), (171, 13813), (191, 13906), (213, 14005), (242, 14161), (256, 14242),

Gene: Adumb2043\_19 Start: 14930, Stop: 16051, Start Num: 37

Candidate Starts for Adumb2043\_19:

(Start: 37 @14930 has 80 MA's), (52, 14990), (64, 15053), (67, 15074), (120, 15338), (153, 15422), (222, 15782), (225, 15800), (239, 15860),

Gene: Aikoy\_38 Start: 28234, Stop: 29478, Start Num: 32

Candidate Starts for Aikoy\_38:

(26, 28186), (29, 28222), (Start: 32 @28234 has 3 MA's), (54, 28333), (59, 28351), (76, 28468), (94, 28537), (97, 28570), (98, 28579), (102, 28606), (112, 28639), (142, 28714), (164, 28810), (170, 28846), (182, 28900), (186, 28921), (190, 28939), (191, 28945), (192, 28948), (195, 28960), (219, 29092), (220, 29095), (248, 29257), (250, 29269), (253, 29278), (278, 29413), (279, 29455),

Gene: AinMach\_18 Start: 14089, Stop: 15219, Start Num: 37

Candidate Starts for AinMach\_18:

(Start: 37 @14089 has 80 MA's), (52, 14158), (87, 14341), (97, 14404), (126, 14509), (128, 14524), (171, 14692), (192, 14788), (196, 14803), (197, 14806), (200, 14818), (206, 14854), (213, 14884), (218, 14938), (221, 14947), (263, 15163), (266, 15190),

Gene: Alephilan\_26 Start: 24820, Stop: 25944, Start Num: 40

Candidate Starts for Alephilan\_26:

(Start: 40 @24820 has 45 MA's), (42, 24826), (Start: 44 @24832 has 1 MA's), (54, 24877), (61, 24901), (72, 24988), (86, 25045), (96, 25090), (101, 25132), (105, 25156), (142, 25258), (161, 25333), (166, 25363), (182, 25444), (189, 25480), (218, 25633), (238, 25735), (246, 25783), (250, 25813),

Gene: Alyssamiracle\_29 Start: 23630, Stop: 24754, Start Num: 40

Candidate Starts for Alyssamiracle\_29:

(Start: 40 @23630 has 45 MA's), (42, 23636), (Start: 44 @23642 has 1 MA's), (54, 23687), (61, 23711), (72, 23798), (86, 23855), (96, 23900), (101, 23942), (105, 23966), (142, 24068), (161, 24143), (166, 24173), (182, 24254), (189, 24290), (218, 24443), (224, 24476), (250, 24623), (269, 24704),

Gene: Amploria\_19 Start: 14930, Stop: 16051, Start Num: 37

Candidate Starts for Amploria\_19:

(Start: 37 @14930 has 80 MA's), (52, 14990), (64, 15053), (67, 15074), (120, 15338), (153, 15422), (222, 15782), (225, 15800), (239, 15860),

Gene: Amyev\_19 Start: 14951, Stop: 16393, Start Num: 37

Candidate Starts for Amyev\_19:

(Start: 37 @14951 has 80 MA's), (52, 15011), (54, 15017), (64, 15074), (67, 15095), (107, 15305), (119, 15353), (130, 15473), (147, 15692), (205, 16022), (222, 16124), (225, 16142), (270, 16361),

Gene: Aoka\_20 Start: 16034, Stop: 17083, Start Num: 114

Candidate Starts for Aoka\_20:

(Start: 114 @16034 has 6 MA's), (128, 16139), (138, 16304), (145, 16370), (201, 16700), (208, 16736), (266, 17057),

Gene: Apeppi\_26 Start: 24963, Stop: 26087, Start Num: 40

Candidate Starts for Apeppi\_26:

(Start: 40 @24963 has 45 MA's), (42, 24969), (54, 25020), (61, 25044), (72, 25131), (86, 25188), (96, 25233), (101, 25275), (103, 25296), (105, 25299), (119, 25362), (142, 25401), (148, 25404), (161, 25476), (166, 25506), (182, 25587), (189, 25623), (218, 25776), (250, 25956),

Gene: Asa16\_19 Start: 14900, Stop: 16021, Start Num: 37

Candidate Starts for Asa16\_19:

(Start: 37 @14900 has 80 MA's), (52, 14960), (54, 14966), (64, 15023), (67, 15044), (120, 15308), (225, 15770),

Gene: Ascela\_19 Start: 14928, Stop: 16049, Start Num: 37

Candidate Starts for Ascela\_19:

(Start: 37 @14928 has 80 MA's), (64, 15051), (67, 15072), (106, 15276), (121, 15342), (225, 15798), (239, 15858),

Gene: Ashes\_19 Start: 14619, Stop: 16067, Start Num: 37

Candidate Starts for Ashes\_19:

(Start: 37 @14619 has 80 MA's), (Start: 51 @14673 has 1 MA's), (120, 15027), (121, 15033), (180, 15579), (191, 15630), (228, 15825),

Gene: Astralis\_26 Start: 23220, Stop: 24344, Start Num: 40

Candidate Starts for Astralis\_26:

(Start: 40 @23220 has 45 MA's), (42, 23226), (Start: 44 @23232 has 1 MA's), (54, 23277), (61, 23301), (72, 23388), (86, 23445), (96, 23490), (101, 23532), (105, 23556), (142, 23658), (161, 23733), (166, 23763), (182, 23844), (189, 23880), (218, 24033), (224, 24066), (250, 24213), (269, 24294),

Gene: Attoomi\_18 Start: 15464, Stop: 16561, Start Num: 37

Candidate Starts for Attoomi\_18:

(Start: 37 @15464 has 80 MA's), (47, 15500), (63, 15575), (67, 15608), (69, 15620), (73, 15653), (74, 15659), (83, 15695), (87, 15704), (90, 15716), (92, 15734), (99, 15785), (100, 15788), (105, 15815), (113, 15845), (122, 15890), (150, 15944), (157, 15965), (160, 15974), (162, 15983), (171, 16043), (180, 16079), (184, 16097), (185, 16100), (188, 16118), (192, 16133), (198, 16154), (200, 16163), (204, 16187), (206, 16199), (222, 16301), (223, 16307), (238, 16379), (259, 16487), (261, 16490), (264, 16502),

Gene: Austintatious\_19 Start: 14189, Stop: 15319, Start Num: 37

Candidate Starts for Austintatious\_19:

(5, 13745), (6, 13760), (9, 13847), (13, 13883), (15, 13955), (Start: 37 @14189 has 80 MA's), (67, 14333), (73, 14378), (78, 14402), (83, 14420), (156, 14693), (183, 14822), (184, 14825), (192, 14861), (211, 14951), (215, 14963), (222, 15032), (238, 15110), (259, 15221),

Gene: Avian\_26 Start: 23612, Stop: 24736, Start Num: 40

Candidate Starts for Avian\_26:

(Start: 40 @23612 has 45 MA's), (42, 23618), (Start: 44 @23624 has 1 MA's), (54, 23669), (61, 23693), (72, 23780), (86, 23837), (96, 23882), (101, 23924), (105, 23948), (142, 24050), (161, 24125), (166, 24155), (182, 24236), (189, 24272), (218, 24425), (224, 24458), (250, 24605), (269, 24686),

Gene: Beaupre\_19 Start: 14620, Stop: 16068, Start Num: 37

Candidate Starts for Beaupre\_19:

(Start: 37 @14620 has 80 MA's), (Start: 51 @14674 has 1 MA's), (115, 14998), (120, 15028), (180, 15580), (191, 15631), (228, 15826),

Gene: Berrie\_19 Start: 15065, Stop: 16186, Start Num: 37

Candidate Starts for Berrie\_19:

(Start: 37 @15065 has 80 MA's), (52, 15125), (54, 15131), (64, 15188), (120, 15473), (121, 15479), (225, 15935), (239, 15995),

Gene: Beyoncage\_24 Start: 20204, Stop: 21337, Start Num: 40

Candidate Starts for Beyoncage\_24:

(Start: 40 @20204 has 45 MA's), (64, 20321), (67, 20342), (70, 20354), (72, 20375), (74, 20384), (80, 20417), (105, 20546), (120, 20615), (169, 20765), (182, 20834), (187, 20858), (198, 20903), (202, 20921), (205, 20945), (212, 20975), (240, 21131), (242, 21137), (250, 21203), (252, 21209), (261, 21242), (267, 21281),

Gene: Bioscum\_19 Start: 14225, Stop: 15355, Start Num: 37

Candidate Starts for Bioscum\_19:

(5, 13781), (6, 13796), (9, 13883), (13, 13919), (15, 13991), (Start: 37 @14225 has 80 MA's), (67, 14369), (73, 14414), (78, 14438), (83, 14456), (183, 14858), (184, 14861), (211, 14987), (215, 14999), (222, 15068), (238, 15146),

Gene: BirthdayBoy\_30 Start: 25673, Stop: 26797, Start Num: 40

Candidate Starts for BirthdayBoy\_30:

(Start: 40 @25673 has 45 MA's), (42, 25679), (Start: 44 @25685 has 1 MA's), (54, 25730), (61, 25754), (72, 25841), (86, 25898), (96, 25943), (101, 25985), (105, 26009), (119, 26072), (142, 26111), (161, 26186), (166, 26216), (182, 26297), (189, 26333), (218, 26486), (250, 26666), (269, 26747),

Gene: BiteSize\_24 Start: 20204, Stop: 21337, Start Num: 40

Candidate Starts for BiteSize\_24:

(Start: 40 @20204 has 45 MA's), (64, 20321), (67, 20342), (70, 20354), (72, 20375), (74, 20384), (80, 20417), (105, 20546), (120, 20615), (169, 20765), (182, 20834), (187, 20858), (198, 20903), (202, 20921), (205, 20945), (212, 20975), (240, 21131), (242, 21137), (250, 21203), (252, 21209), (261, 21242), (267, 21281),

Gene: Candle\_29 Start: 23449, Stop: 24636, Start Num: 37

Candidate Starts for Candle\_29:

(21, 23344), (22, 23350), (Start: 37 @23449 has 80 MA's), (43, 23476), (Start: 44 @23479 has 1 MA's), (56, 23524), (58, 23536), (61, 23545), (86, 23710), (105, 23821), (109, 23839), (136, 23917), (138, 23926), (142, 23941), (189, 24163), (192, 24175), (218, 24316), (219, 24319), (239, 24424), (246, 24469), (250, 24499), (257, 24523), (259, 24535), (261, 24538), (270, 24586), (276, 24625),

Gene: Cappuccino\_19 Start: 14527, Stop: 15975, Start Num: 37

Candidate Starts for Cappuccino\_19:

(Start: 37 @14527 has 80 MA's), (Start: 51 @14581 has 1 MA's), (115, 14905), (120, 14935), (180, 15487), (228, 15733),

Gene: Cassia\_19 Start: 15026, Stop: 16147, Start Num: 37

Candidate Starts for Cassia\_19:

(Start: 37 @15026 has 80 MA's), (66, 15161), (67, 15170), (83, 15260), (120, 15434), (225, 15896),

Gene: Charminar\_27 Start: 23223, Stop: 24347, Start Num: 40

Candidate Starts for Charminar\_27:

(Start: 40 @23223 has 45 MA's), (42, 23229), (Start: 44 @23235 has 1 MA's), (54, 23280), (61, 23304), (72, 23391), (86, 23448), (96, 23493), (101, 23535), (105, 23559), (142, 23661), (161, 23736), (166, 23766), (182, 23847), (189, 23883), (218, 24036), (224, 24069), (250, 24216), (269, 24297),

Gene: Community\_19 Start: 16147, Stop: 17589, Start Num: 37

Candidate Starts for Community\_19:

(Start: 37 @16147 has 80 MA's), (52, 16207), (54, 16213), (64, 16270), (107, 16501), (121, 16561), (145, 16855), (146, 16876), (225, 17338), (241, 17404),

Gene: Cuke\_22 Start: 19244, Stop: 20422, Start Num: 37

Candidate Starts for Cuke\_22:

(33, 19232), (Start: 37 @19244 has 80 MA's), (43, 19271), (46, 19283), (49, 19298), (58, 19331), (68, 19400), (86, 19505), (94, 19541), (142, 19718), (166, 19823), (189, 19940), (192, 19952), (219, 20096), (250, 20273), (261, 20312), (262, 20315), (266, 20345), (270, 20360),

Gene: Cyan\_19 Start: 14919, Stop: 16040, Start Num: 37

Candidate Starts for Cyan\_19:

(Start: 37 @14919 has 80 MA's), (52, 14979), (64, 15042), (67, 15063), (109, 15276), (120, 15327), (121, 15333), (181, 15555), (222, 15771), (225, 15789), (239, 15849),

Gene: DaRealMyers\_19 Start: 14650, Stop: 15747, Start Num: 37

Candidate Starts for DaRealMyers\_19:

(Start: 37 @14650 has 80 MA's), (73, 14839), (100, 14974), (109, 15019), (111, 15028), (115, 15040), (184, 15280), (211, 15406), (222, 15484), (240, 15568), (241, 15571), (263, 15679), (273, 15730),

Gene: Darolandstone\_19 Start: 14810, Stop: 15910, Start Num: 36

Candidate Starts for Darolandstone\_19:

(3, 14216), (4, 14333), (7, 14420), (14, 14534), (16, 14633), (23, 14729), (31, 14795), (Start: 36 @14810 has 4 MA's), (64, 14939), (67, 14960), (99, 15137), (141, 15266), (173, 15401), (234, 15713), (259, 15836), (264, 15851), (273, 15896),

Gene: DaviePasture\_29 Start: 25439, Stop: 26563, Start Num: 40

Candidate Starts for DaviePasture\_29:

(Start: 40 @25439 has 45 MA's), (42, 25445), (Start: 44 @25451 has 1 MA's), (54, 25496), (61, 25520), (72, 25607), (86, 25664), (96, 25709), (103, 25772), (105, 25775), (119, 25838), (142, 25877), (148, 25880), (161, 25952), (166, 25982), (182, 26063), (189, 26099), (218, 26252), (232, 26333), (238, 26354), (250, 26432), (269, 26513),

Gene: Djokovic\_24 Start: 20204, Stop: 21337, Start Num: 40

Candidate Starts for Djokovic\_24:

(Start: 40 @20204 has 45 MA's), (64, 20321), (67, 20342), (70, 20354), (72, 20375), (74, 20384), (80, 20417), (105, 20546), (120, 20615), (169, 20765), (182, 20834), (187, 20858), (198, 20903), (202, 20921), (205, 20945), (212, 20975), (240, 21131), (242, 21137), (250, 21203), (252, 21209), (261, 21242), (267, 21281),

Gene: Donkey\_19 Start: 14527, Stop: 15975, Start Num: 37

Candidate Starts for Donkey\_19:

(Start: 37 @14527 has 80 MA's), (Start: 51 @14581 has 1 MA's), (115, 14905), (120, 14935), (180, 15487), (228, 15733),

Gene: DoobyDoo\_28 Start: 24595, Stop: 25719, Start Num: 40

Candidate Starts for DoobyDoo\_28:

(Start: 40 @24595 has 45 MA's), (42, 24601), (Start: 44 @24607 has 1 MA's), (54, 24652), (61, 24676), (72, 24763), (86, 24820), (96, 24865), (101, 24907), (105, 24931), (119, 24994), (142, 25033), (161, 25108), (166, 25138), (189, 25255), (218, 25408), (232, 25489), (238, 25510), (250, 25588), (269, 25669),

Gene: DumpTruck\_28 Start: 24905, Stop: 26032, Start Num: 40

Candidate Starts for DumpTruck\_28:

(Start: 40 @24905 has 45 MA's), (61, 24986), (76, 25097), (86, 25130), (96, 25175), (101, 25217), (105, 25241), (119, 25304), (142, 25343), (172, 25481), (184, 25541), (185, 25544), (189, 25565), (196, 25592), (206, 25643), (218, 25718), (246, 25868), (250, 25898), (256, 25916), (267, 25973),

Gene: Elezi\_19 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for Elezi\_19:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: Emotion\_18 Start: 13147, Stop: 14427, Start Num: 38

Candidate Starts for Emotion\_18:

(Start: 38 @13147 has 7 MA's), (67, 13297), (171, 13915), (191, 14008), (213, 14107),

Gene: Eraser\_19 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for Eraser\_19:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: Erutan\_29 Start: 25117, Stop: 26241, Start Num: 40

Candidate Starts for Erutan\_29:

(Start: 40 @25117 has 45 MA's), (42, 25123), (54, 25174), (61, 25198), (72, 25285), (86, 25342), (96, 25387), (101, 25429), (105, 25453), (142, 25555), (161, 25630), (166, 25660), (182, 25741), (189, 25777), (218, 25930), (250, 26110), (269, 26191),

Gene: EvenBluerMoon\_20 Start: 16069, Stop: 17118, Start Num: 114

Candidate Starts for EvenBluerMoon\_20:

(Start: 114 @16069 has 6 MA's), (128, 16174), (138, 16339), (145, 16405), (201, 16735), (208, 16771), (266, 17092),

Gene: Exile\_18 Start: 15565, Stop: 16650, Start Num: 37

Candidate Starts for Exile\_18:

(Start: 37 @15565 has 80 MA's), (48, 15619), (97, 15877), (106, 15919), (174, 16138), (213, 16315), (218, 16360), (227, 16408), (263, 16585), (266, 16612), (274, 16642),

Gene: Flutur\_19 Start: 14919, Stop: 16040, Start Num: 37

Candidate Starts for Flutur\_19:

(Start: 37 @14919 has 80 MA's), (52, 14979), (64, 15042), (67, 15063), (109, 15276), (120, 15327), (121, 15333), (181, 15555), (222, 15771), (225, 15789), (239, 15849),

Gene: Fowlmouth\_23 Start: 19374, Stop: 20546, Start Num: 37

Candidate Starts for Fowlmouth\_23:

(33, 19362), (Start: 37 @19374 has 80 MA's), (53, 19443), (59, 19464), (86, 19635), (94, 19671), (109, 19764), (122, 19821), (142, 19848), (152, 19881), (160, 19917), (166, 19953), (186, 20055), (189, 20070), (219, 20226), (250, 20403), (253, 20412), (256, 20421), (261, 20442), (262, 20445), (270, 20490),

Gene: Fulcrum\_30 Start: 25641, Stop: 26765, Start Num: 40

Candidate Starts for Fulcrum\_30:

(Start: 40 @25641 has 45 MA's), (42, 25647), (Start: 44 @25653 has 1 MA's), (54, 25698), (61, 25722), (72, 25809), (86, 25866), (96, 25911), (101, 25953), (105, 25977), (119, 26040), (142, 26079), (161, 26154), (166, 26184), (182, 26265), (189, 26301), (218, 26454), (232, 26535), (238, 26556), (250,

26634), (269, 26715),

Gene: GOATification\_30 Start: 25641, Stop: 26765, Start Num: 40

Candidate Starts for GOATification\_30:

(Start: 40 @25641 has 45 MA's), (42, 25647), (Start: 44 @25653 has 1 MA's), (54, 25698), (61, 25722), (72, 25809), (86, 25866), (96, 25911), (101, 25953), (105, 25977), (119, 26040), (142, 26079), (161, 26154), (166, 26184), (182, 26265), (189, 26301), (218, 26454), (232, 26535), (238, 26556), (250, 26634), (269, 26715),

Gene: Galactica\_23 Start: 20117, Stop: 21220, Start Num: 36

Candidate Starts for Galactica\_23:

(Start: 36 @20117 has 4 MA's), (Start: 37 @20123 has 80 MA's), (69, 20279), (74, 20318), (75, 20321), (165, 20666), (173, 20708), (184, 20753), (211, 20879), (230, 20990), (239, 21038), (256, 21128),

Gene: Gambol\_19 Start: 14527, Stop: 15975, Start Num: 37

Candidate Starts for Gambol\_19:

(Start: 37 @14527 has 80 MA's), (Start: 51 @14581 has 1 MA's), (115, 14905), (120, 14935), (180, 15487), (228, 15733),

Gene: Genamy16\_29 Start: 23630, Stop: 24754, Start Num: 40

Candidate Starts for Genamy16\_29:

(Start: 40 @23630 has 45 MA's), (42, 23636), (Start: 44 @23642 has 1 MA's), (54, 23687), (61, 23711), (72, 23798), (86, 23855), (96, 23900), (101, 23942), (105, 23966), (142, 24068), (161, 24143), (166, 24173), (182, 24254), (189, 24290), (218, 24443), (224, 24476), (250, 24623), (269, 24704),

Gene: Gibbin\_30 Start: 25722, Stop: 26846, Start Num: 40

Candidate Starts for Gibbin\_30:

(Start: 40 @25722 has 45 MA's), (42, 25728), (Start: 44 @25734 has 1 MA's), (54, 25779), (61, 25803), (72, 25890), (86, 25947), (96, 25992), (101, 26034), (105, 26058), (119, 26121), (142, 26160), (161, 26235), (166, 26265), (182, 26346), (189, 26382), (218, 26535), (232, 26616), (238, 26637), (250, 26715), (269, 26796),

Gene: Gilgamesh\_70 Start: 64726, Stop: 65949, Start Num: 30

Candidate Starts for Gilgamesh\_70:

(Start: 30 @64726 has 1 MA's), (67, 64900), (101, 65080), (138, 65218), (181, 65470), (202, 65560), (206, 65587), (207, 65590), (213, 65617), (218, 65662), (219, 65665), (249, 65833), (251, 65839), (257, 65863), (269, 65920),

Gene: Giorgio\_19 Start: 14627, Stop: 16075, Start Num: 37

Candidate Starts for Giorgio\_19:

(Start: 37 @14627 has 80 MA's), (Start: 51 @14681 has 1 MA's), (115, 15005), (120, 15035), (180, 15587), (191, 15638), (228, 15833),

Gene: Gretellyn\_29 Start: 25984, Stop: 27108, Start Num: 40

Candidate Starts for Gretellyn\_29:

(Start: 40 @25984 has 45 MA's), (42, 25990), (Start: 44 @25996 has 1 MA's), (54, 26041), (61, 26065), (72, 26152), (86, 26209), (96, 26254), (101, 26296), (105, 26320), (119, 26383), (142, 26422), (161, 26497), (166, 26527), (182, 26608), (189, 26644), (218, 26797), (232, 26878), (238, 26899), (250, 26977), (269, 27058),

Gene: Gumpizza\_19 Start: 14620, Stop: 16068, Start Num: 37

Candidate Starts for Gumpizza\_19:

(Start: 37 @14620 has 80 MA's), (Start: 51 @14674 has 1 MA's), (115, 14998), (120, 15028), (180, 15580), (191, 15631), (228, 15826),

Gene: Halsey\_19 Start: 14619, Stop: 16067, Start Num: 37

Candidate Starts for Halsey\_19:

(Start: 37 @14619 has 80 MA's), (Start: 51 @14673 has 1 MA's), (120, 15027), (121, 15033), (180, 15579), (191, 15630), (228, 15825),

Gene: Hereford\_29 Start: 16193, Stop: 17242, Start Num: 114

Candidate Starts for Hereford\_29:

(Start: 114 @16193 has 6 MA's), (138, 16463), (145, 16529), (201, 16859), (208, 16895), (266, 17216),

Gene: Hiyaa\_25 Start: 21164, Stop: 22261, Start Num: 37

Candidate Starts for Hiyaa\_25:

(35, 21158), (Start: 37 @21164 has 80 MA's), (62, 21266), (69, 21320), (74, 21359), (83, 21395), (90, 21416), (92, 21434), (165, 21707), (171, 21740), (179, 21773), (184, 21794), (211, 21920), (230, 22031), (241, 22085),

Gene: IUFootball\_18 Start: 13443, Stop: 14564, Start Num: 37

Candidate Starts for IUFootball\_18:

(Start: 37 @13443 has 80 MA's), (55, 13512), (63, 13554), (64, 13566), (67, 13587), (120, 13851), (153, 13935), (195, 14142), (199, 14154), (225, 14313), (239, 14373), (247, 14430), (254, 14457), (256, 14466),

Gene: Ididsumtinwong\_19 Start: 14225, Stop: 15355, Start Num: 37

Candidate Starts for Ididsumtinwong\_19:

(5, 13781), (6, 13796), (9, 13883), (13, 13919), (15, 13991), (Start: 37 @14225 has 80 MA's), (67, 14369), (73, 14414), (78, 14438), (83, 14456), (183, 14858), (184, 14861), (211, 14987), (215, 14999), (222, 15068), (238, 15146),

Gene: Iter\_19 Start: 14928, Stop: 16049, Start Num: 37

Candidate Starts for Iter\_19:

(Start: 37 @14928 has 80 MA's), (64, 15051), (67, 15072), (106, 15276), (121, 15342), (225, 15798), (239, 15858),

Gene: Jalebi\_28 Start: 26151, Stop: 27275, Start Num: 40

Candidate Starts for Jalebi\_28:

(Start: 40 @26151 has 45 MA's), (42, 26157), (Start: 44 @26163 has 1 MA's), (54, 26208), (61, 26232), (72, 26319), (86, 26376), (96, 26421), (101, 26463), (142, 26589), (161, 26664), (166, 26694), (182, 26775), (189, 26811), (218, 26964), (232, 27045), (238, 27066), (250, 27144), (269, 27225),

Gene: Jamemuya19\_26 Start: 23220, Stop: 24344, Start Num: 40

Candidate Starts for Jamemuya19\_26:

(Start: 40 @23220 has 45 MA's), (42, 23226), (Start: 44 @23232 has 1 MA's), (54, 23277), (61, 23301), (72, 23388), (86, 23445), (96, 23490), (101, 23532), (105, 23556), (142, 23658), (161, 23733), (166, 23763), (182, 23844), (189, 23880), (218, 24033), (224, 24066), (250, 24213), (269, 24294),

Gene: Janeemi\_20 Start: 16175, Stop: 17617, Start Num: 37

Candidate Starts for Janeemi\_20:

(Start: 37 @16175 has 80 MA's), (52, 16235), (64, 16298), (107, 16529), (121, 16589), (225, 17366), (246, 17471),

Gene: JanetJ\_20 Start: 15852, Stop: 16901, Start Num: 114

Candidate Starts for JanetJ\_20:

(Start: 114 @15852 has 6 MA's), (118, 15870), (124, 15930), (138, 16122), (145, 16188), (201, 16518), (208, 16554), (266, 16875), (267, 16881),

Gene: JasmineDragon\_18 Start: 13074, Stop: 14306, Start Num: 38

Candidate Starts for JasmineDragon\_18:

(Start: 38 @13074 has 7 MA's), (72, 13269), (77, 13293), (139, 13644), (171, 13800), (191, 13890), (213, 13989), (242, 14145), (256, 14226),

Gene: Joemato\_19 Start: 14919, Stop: 16040, Start Num: 37

Candidate Starts for Joemato\_19:

(Start: 37 @14919 has 80 MA's), (52, 14979), (64, 15042), (67, 15063), (109, 15276), (120, 15327), (121, 15333), (181, 15555), (222, 15771), (225, 15789), (239, 15849),

Gene: JohnDoe\_19 Start: 14914, Stop: 16035, Start Num: 37

Candidate Starts for JohnDoe\_19:

(Start: 37 @14914 has 80 MA's), (52, 14974), (64, 15037), (67, 15058), (109, 15271), (120, 15322), (121, 15328), (181, 15550), (225, 15784), (239, 15844),

Gene: Jstan\_20 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for Jstan\_20:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: JuneStar\_19 Start: 15024, Stop: 16145, Start Num: 37

Candidate Starts for JuneStar\_19:

(Start: 37 @15024 has 80 MA's), (67, 15168), (83, 15258), (121, 15438), (225, 15894), (269, 16110),

Gene: Kalimba\_19 Start: 14528, Stop: 15976, Start Num: 37

Candidate Starts for Kalimba\_19:

(Start: 37 @14528 has 80 MA's), (Start: 51 @14582 has 1 MA's), (115, 14906), (120, 14936), (180, 15488), (228, 15734),

Gene: Kaylissa\_19 Start: 14920, Stop: 16041, Start Num: 37

Candidate Starts for Kaylissa\_19:

(Start: 37 @14920 has 80 MA's), (52, 14980), (64, 15043), (67, 15064), (109, 15277), (120, 15328), (121, 15334), (181, 15556), (225, 15790), (239, 15850),

Gene: Keanu\_25 Start: 21193, Stop: 22296, Start Num: 36

Candidate Starts for Keanu\_25:

(Start: 36 @21193 has 4 MA's), (54, 21265), (69, 21355), (74, 21394), (92, 21469), (93, 21475), (102, 21544), (159, 21706), (160, 21709), (165, 21742), (171, 21775), (184, 21829), (189, 21853), (210, 21952), (211, 21955), (222, 22033), (256, 22204),

Gene: Kokushibo\_25 Start: 21173, Stop: 22276, Start Num: 35

Candidate Starts for Kokushibo\_25:

(35, 21173), (Start: 37 @21179 has 80 MA's), (62, 21281), (69, 21335), (74, 21374), (83, 21410), (90, 21431), (92, 21449), (165, 21722), (171, 21755), (179, 21788), (184, 21809), (211, 21935), (230, 22046), (241, 22100),

Gene: LadyAstra\_19 Start: 13076, Stop: 14311, Start Num: 38

Candidate Starts for LadyAstra\_19:

(12, 12755), (Start: 38 @13076 has 7 MA's), (72, 13271), (77, 13295), (139, 13646), (171, 13802), (191, 13895), (213, 13994), (242, 14150), (256, 14231),

Gene: Lambo\_29 Start: 25656, Stop: 26780, Start Num: 40

Candidate Starts for Lambo\_29:

(Start: 40 @25656 has 45 MA's), (42, 25662), (54, 25713), (61, 25737), (72, 25824), (86, 25881), (96, 25926), (101, 25968), (105, 25992), (119, 26055), (142, 26094), (161, 26169), (166, 26199), (182, 26280), (189, 26316), (218, 26469), (250, 26649),

Gene: LavAbarElk\_27 Start: 24090, Stop: 25214, Start Num: 40

Candidate Starts for LavAbarElk\_27:

(Start: 40 @24090 has 45 MA's), (42, 24096), (Start: 44 @24102 has 1 MA's), (54, 24147), (61, 24171), (72, 24258), (86, 24315), (96, 24360), (101, 24402), (142, 24528), (161, 24603), (166, 24633), (182, 24714), (189, 24750), (218, 24903), (232, 24984), (238, 25005), (250, 25083), (269, 25164),

Gene: Lego\_19 Start: 14919, Stop: 16040, Start Num: 37

Candidate Starts for Lego\_19:

(Start: 37 @14919 has 80 MA's), (52, 14979), (64, 15042), (67, 15063), (109, 15276), (120, 15327), (121, 15333), (181, 15555), (222, 15771), (225, 15789), (239, 15849),

Gene: Leopard\_38 Start: 28522, Stop: 29766, Start Num: 32

Candidate Starts for Leopard\_38:

(26, 28474), (29, 28510), (Start: 32 @28522 has 3 MA's), (54, 28621), (59, 28639), (76, 28756), (94, 28825), (97, 28858), (98, 28867), (102, 28894), (109, 28918), (112, 28927), (142, 29002), (164, 29098), (170, 29134), (182, 29188), (186, 29209), (190, 29227), (191, 29233), (192, 29236), (195, 29248), (219, 29380), (220, 29383), (248, 29545), (250, 29557), (253, 29566), (278, 29701), (279, 29743),

Gene: Liebe\_18 Start: 13443, Stop: 14564, Start Num: 37

Candidate Starts for Liebe\_18:

(Start: 37 @13443 has 80 MA's), (55, 13512), (63, 13554), (64, 13566), (67, 13587), (120, 13851), (153, 13935), (195, 14142), (199, 14154), (225, 14313), (239, 14373), (247, 14430), (254, 14457), (256, 14466),

Gene: Lila22\_28 Start: 25623, Stop: 26735, Start Num: 44

Candidate Starts for Lila22\_28:

(Start: 40 @25611 has 45 MA's), (42, 25617), (Start: 44 @25623 has 1 MA's), (54, 25668), (61, 25692), (72, 25779), (86, 25836), (96, 25881), (101, 25923), (105, 25947), (119, 26010), (142, 26049), (161, 26124), (166, 26154), (182, 26235), (189, 26271), (218, 26424), (232, 26505), (238, 26526), (250, 26604),

Gene: LilyPad\_25 Start: 20787, Stop: 21920, Start Num: 40

Candidate Starts for LilyPad\_25:

(Start: 40 @20787 has 45 MA's), (52, 20838), (55, 20847), (59, 20865), (64, 20904), (67, 20925), (80, 21000), (95, 21060), (105, 21129), (120, 21198), (198, 21486), (202, 21504), (207, 21534), (212, 21558), (218, 21606), (242, 21720), (250, 21786), (252, 21792), (261, 21825), (263, 21831), (267, 21864), (272, 21879),

Gene: Lishka\_19 Start: 14189, Stop: 15319, Start Num: 37

Candidate Starts for Lishka\_19:

(5, 13745), (6, 13760), (9, 13847), (13, 13883), (15, 13955), (Start: 37 @14189 has 80 MA's), (67, 14333), (73, 14378), (78, 14402), (83, 14420), (156, 14693), (183, 14822), (184, 14825), (192, 14861), (211, 14951), (215, 14963), (222, 15032), (238, 15110), (259, 15221),

Gene: LisoBros\_18 Start: 14897, Stop: 16402, Start Num: 10

Candidate Starts for LisoBros\_18:

(10, 14897), (17, 15068), (18, 15074), (34, 15212), (Start: 37 @15221 has 80 MA's), (50, 15284), (79, 15461), (90, 15494), (116, 15641), (117, 15647), (129, 15701), (157, 15803), (163, 15836), (213, 16067), (214, 16070), (220, 16118), (226, 16157), (263, 16337), (267, 16370), (274, 16394),

Gene: LittleFella\_26 Start: 22663, Stop: 23796, Start Num: 40

Candidate Starts for LittleFella\_26:

(Start: 40 @22663 has 45 MA's), (54, 22720), (55, 22723), (67, 22801), (74, 22843), (81, 22879), (101, 22981), (105, 23005), (107, 23020), (120, 23074), (122, 23080), (157, 23167), (173, 23251), (195, 23353), (198, 23362), (202, 23380), (203, 23386), (212, 23434), (218, 23482), (232, 23563), (240, 23590), (242, 23596), (250, 23662), (252, 23668), (261, 23701), (263, 23707), (267, 23740), (269, 23746), (272, 23755),

Gene: Lizalica\_19 Start: 14904, Stop: 16025, Start Num: 37

Candidate Starts for Lizalica\_19:

(Start: 37 @14904 has 80 MA's), (52, 14964), (64, 15027), (67, 15048), (120, 15312), (121, 15318), (222, 15756), (225, 15774), (239, 15834),

Gene: London\_19 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for London\_19:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: LuckyBarnes\_26 Start: 21950, Stop: 23038, Start Num: 37

Candidate Starts for LuckyBarnes\_26:

(Start: 37 @21950 has 80 MA's), (57, 22034), (61, 22049), (98, 22274), (135, 22403), (137, 22415), (166, 22487), (170, 22514), (191, 22607), (201, 22646), (205, 22673), (207, 22679), (213, 22706), (229, 22805), (241, 22859), (244, 22883), (259, 22964),

Gene: LuckyLeo\_28 Start: 24963, Stop: 26087, Start Num: 40

Candidate Starts for LuckyLeo\_28:

(Start: 40 @24963 has 45 MA's), (42, 24969), (54, 25020), (61, 25044), (72, 25131), (86, 25188), (96, 25233), (101, 25275), (103, 25296), (105, 25299), (119, 25362), (142, 25401), (148, 25404), (161, 25476), (166, 25506), (182, 25587), (189, 25623), (218, 25776), (250, 25956),

Gene: MaGuCo\_18 Start: 13377, Stop: 14498, Start Num: 37

Candidate Starts for MaGuCo\_18:

(Start: 37 @13377 has 80 MA's), (64, 13500), (67, 13521), (121, 13791), (153, 13869), (195, 14076), (199, 14088), (222, 14229), (225, 14247), (239, 14307), (247, 14364), (254, 14391), (256, 14400),

Gene: Madi\_24 Start: 20204, Stop: 21337, Start Num: 40

Candidate Starts for Madi\_24:

(Start: 40 @20204 has 45 MA's), (64, 20321), (67, 20342), (70, 20354), (72, 20375), (74, 20384), (80, 20417), (105, 20546), (120, 20615), (169, 20765), (182, 20834), (187, 20858), (198, 20903), (202, 20921), (205, 20945), (212, 20975), (240, 21131), (242, 21137), (250, 21203), (252, 21209), (261, 21242), (267, 21281),

Gene: Maruru\_18 Start: 18201, Stop: 19316, Start Num: 38

Candidate Starts for Maruru\_18:

(Start: 38 @18201 has 7 MA's), (104, 18552), (167, 18750), (169, 18762), (178, 18801), (189, 18855), (213, 18963), (231, 19086), (242, 19128), (261, 19239), (268, 19281), (275, 19308),

Gene: Maureen\_18 Start: 13443, Stop: 14564, Start Num: 37

Candidate Starts for Maureen\_18:

(Start: 37 @13443 has 80 MA's), (55, 13512), (63, 13554), (64, 13566), (67, 13587), (120, 13851), (153, 13935), (195, 14142), (199, 14154), (225, 14313), (239, 14373), (247, 14430), (254, 14457), (256, 14466),

Gene: Mima20\_27 Start: 25340, Stop: 26464, Start Num: 40

Candidate Starts for Mima20\_27:

(Start: 40 @25340 has 45 MA's), (42, 25346), (Start: 44 @25352 has 1 MA's), (54, 25397), (61, 25421), (72, 25508), (86, 25565), (96, 25610), (101, 25652), (105, 25676), (119, 25739), (142, 25778), (161, 25853), (166, 25883), (182, 25964), (189, 26000), (218, 26153), (232, 26234), (238, 26255), (250, 26333), (269, 26414),

Gene: MiniMommy\_18 Start: 13075, Stop: 14307, Start Num: 38

Candidate Starts for MiniMommy\_18:

(Start: 38 @13075 has 7 MA's), (72, 13270), (77, 13294), (139, 13645), (171, 13801), (191, 13891), (213, 13990), (242, 14146), (256, 14227),

Gene: MoiGyank\_31 Start: 26021, Stop: 27145, Start Num: 40

Candidate Starts for MoiGyank\_31:

(Start: 40 @26021 has 45 MA's), (42, 26027), (Start: 44 @26033 has 1 MA's), (54, 26078), (61, 26102), (72, 26189), (86, 26246), (96, 26291), (101, 26333), (142, 26459), (161, 26534), (166, 26564), (182, 26645), (189, 26681), (218, 26834), (232, 26915), (238, 26936), (250, 27014), (269, 27095),

Gene: Mojerita\_19 Start: 14327, Stop: 15457, Start Num: 37

Candidate Starts for Mojerita\_19:

(Start: 37 @14327 has 80 MA's), (67, 14471), (71, 14495), (78, 14540), (83, 14558), (94, 14606), (140, 14780), (151, 14816), (155, 14822), (211, 15089), (215, 15101), (238, 15248),

Gene: MontyDev\_29 Start: 23090, Stop: 24277, Start Num: 37

Candidate Starts for MontyDev\_29:

(21, 22985), (22, 22991), (Start: 37 @23090 has 80 MA's), (43, 23117), (Start: 44 @23120 has 1 MA's), (56, 23165), (58, 23177), (61, 23186), (105, 23462), (109, 23480), (136, 23558), (138, 23567), (142, 23582), (189, 23804), (192, 23816), (218, 23957), (219, 23960), (239, 24065), (246, 24110), (250, 24140), (257, 24164), (259, 24176), (261, 24179), (270, 24227), (276, 24266),

Gene: Moss\_19 Start: 14619, Stop: 16067, Start Num: 37

Candidate Starts for Moss\_19:

(Start: 37 @14619 has 80 MA's), (Start: 51 @14673 has 1 MA's), (120, 15027), (121, 15033), (180, 15579), (191, 15630), (228, 15825),

Gene: MrMiyagi\_23 Start: 19394, Stop: 20566, Start Num: 37

Candidate Starts for MrMiyagi\_23:

(33, 19382), (Start: 37 @19394 has 80 MA's), (49, 19448), (53, 19463), (59, 19484), (86, 19655), (94, 19691), (109, 19784), (122, 19841), (142, 19868), (152, 19901), (160, 19937), (166, 19973), (186, 20075), (189, 20090), (219, 20246), (250, 20423), (253, 20432), (256, 20441), (261, 20462), (262, 20465), (270, 20510),

Gene: Mudpuppy\_19 Start: 14918, Stop: 16039, Start Num: 37

Candidate Starts for Mudpuppy\_19:

(Start: 37 @14918 has 80 MA's), (52, 14978), (64, 15041), (67, 15062), (109, 15275), (120, 15326), (121, 15332), (181, 15554), (222, 15770), (225, 15788), (239, 15848),

Gene: Mufasa8\_18 Start: 18827, Stop: 19933, Start Num: 39

Candidate Starts for Mufasa8\_18:

(Start: 39 @18827 has 1 MA's), (60, 18908), (88, 19064), (91, 19079), (94, 19100), (108, 19190), (113, 19202), (115, 19211), (158, 19328), (167, 19370), (169, 19382), (171, 19397), (189, 19475), (238, 19733), (248, 19799), (264, 19868),

Gene: Mysterium\_19 Start: 14620, Stop: 16068, Start Num: 37

Candidate Starts for Mysterium\_19:

(Start: 37 @14620 has 80 MA's), (Start: 51 @14674 has 1 MA's), (115, 14998), (120, 15028), (180, 15580), (191, 15631), (228, 15826),

Gene: Nilo\_30 Start: 23446, Stop: 24633, Start Num: 37

Candidate Starts for Nilo\_30:

(21, 23341), (22, 23347), (27, 23386), (Start: 37 @23446 has 80 MA's), (43, 23473), (Start: 44 @23476 has 1 MA's), (56, 23521), (58, 23533), (61, 23542), (86, 23707), (105, 23818), (109, 23836), (136, 23914), (138, 23923), (142, 23938), (189, 24160), (192, 24172), (218, 24313), (219, 24316), (239, 24421), (246, 24466), (250, 24496), (257, 24520), (259, 24532), (261, 24535), (270, 24583), (276, 24622),

Gene: Niobe\_19 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for Niobe\_19:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: Nitro\_19 Start: 14929, Stop: 16050, Start Num: 37

Candidate Starts for Nitro\_19:

(Start: 37 @14929 has 80 MA's), (52, 14989), (64, 15052), (67, 15073), (121, 15343), (154, 15430), (225, 15799),

Gene: NoSwimming\_21 Start: 16995, Stop: 18044, Start Num: 114

Candidate Starts for NoSwimming\_21:

(45, 16623), (106, 16965), (Start: 114 @16995 has 6 MA's), (118, 17013), (132, 17169), (133, 17196), (134, 17244), (138, 17265), (145, 17331), (149, 17412), (193, 17637), (201, 17661), (206, 17691), (208, 17697), (216, 17739), (233, 17856), (254, 17958), (266, 18018), (267, 18024),

Gene: NorManre\_30 Start: 25228, Stop: 26352, Start Num: 40

Candidate Starts for NorManre\_30:

(Start: 40 @25228 has 45 MA's), (42, 25234), (Start: 44 @25240 has 1 MA's), (54, 25285), (61, 25309), (72, 25396), (86, 25453), (96, 25498), (101, 25540), (105, 25564), (119, 25627), (142, 25666), (161, 25741), (166, 25771), (182, 25852), (189, 25888), (218, 26041), (232, 26122), (238, 26143), (250, 26221), (269, 26302),

Gene: NovaSharks\_28 Start: 23220, Stop: 24344, Start Num: 40

Candidate Starts for NovaSharks\_28:

(Start: 40 @23220 has 45 MA's), (42, 23226), (Start: 44 @23232 has 1 MA's), (54, 23277), (61, 23301), (72, 23388), (86, 23445), (96, 23490), (101, 23532), (105, 23556), (142, 23658), (161, 23733), (166, 23763), (182, 23844), (189, 23880), (218, 24033), (224, 24066), (250, 24213), (269, 24294),

Gene: OnionKnight\_20 Start: 16035, Stop: 17189, Start Num: 127

Candidate Starts for OnionKnight\_20:

(20, 15387), (84, 15777), (125, 16023), (Start: 127 @16035 has 1 MA's), (131, 16101), (143, 16245), (144, 16251), (159, 16395), (168, 16440), (177, 16491), (179, 16506), (194, 16572), (207, 16632),

(235, 16800), (236, 16803), (237, 16812), (245, 16851), (255, 16908), (257, 16926), (258, 16929), (260, 16944), (263, 16953), (265, 16971), (269, 16992), (274, 17010), (277, 17049), (280, 17112), (281, 17124), (282, 17178), (283, 17184),

Gene: Onyinye\_39 Start: 28401, Stop: 29645, Start Num: 32

Candidate Starts for Onyinye\_39:

(26, 28353), (29, 28389), (Start: 32 @28401 has 3 MA's), (54, 28500), (59, 28518), (76, 28635), (94, 28704), (97, 28737), (98, 28746), (102, 28773), (112, 28806), (142, 28881), (164, 28977), (170, 29013), (182, 29067), (186, 29088), (190, 29106), (191, 29112), (192, 29115), (195, 29127), (219, 29259), (220, 29262), (248, 29424), (250, 29436), (253, 29445), (278, 29580), (279, 29622),

Gene: Origami\_19 Start: 13076, Stop: 14311, Start Num: 38

Candidate Starts for Origami\_19:

(12, 12755), (Start: 38 @13076 has 7 MA's), (72, 13271), (77, 13295), (139, 13646), (171, 13802), (191, 13895), (213, 13994), (242, 14150), (256, 14231),

Gene: OtterstedtS21\_29 Start: 25306, Stop: 26430, Start Num: 40

Candidate Starts for OtterstedtS21\_29:

(Start: 40 @25306 has 45 MA's), (42, 25312), (Start: 44 @25318 has 1 MA's), (54, 25363), (61, 25387), (72, 25474), (86, 25531), (96, 25576), (101, 25618), (142, 25744), (161, 25819), (166, 25849), (182, 25930), (189, 25966), (218, 26119), (232, 26200), (238, 26221), (250, 26299), (269, 26380),

Gene: PapayaSalad\_19 Start: 14200, Stop: 15330, Start Num: 37

Candidate Starts for PapayaSalad\_19:

(25, 14128), (Start: 37 @14200 has 80 MA's), (48, 14248), (67, 14344), (73, 14389), (78, 14413), (83, 14431), (140, 14653), (155, 14695), (156, 14704), (183, 14833), (184, 14836), (211, 14962), (215, 14974), (222, 15043), (238, 15121),

Gene: Papyrus\_29 Start: 23111, Stop: 24298, Start Num: 37

Candidate Starts for Papyrus\_29:

(21, 23006), (22, 23012), (Start: 37 @23111 has 80 MA's), (43, 23138), (Start: 44 @23141 has 1 MA's), (56, 23186), (58, 23198), (61, 23207), (105, 23483), (109, 23501), (136, 23579), (138, 23588), (142, 23603), (148, 23606), (189, 23825), (192, 23837), (218, 23978), (219, 23981), (239, 24086), (246, 24131), (250, 24161), (257, 24185), (259, 24197), (261, 24200), (270, 24248), (276, 24287),

Gene: ParvusTarda\_29 Start: 24788, Stop: 25912, Start Num: 40

Candidate Starts for ParvusTarda\_29:

(Start: 40 @24788 has 45 MA's), (42, 24794), (Start: 44 @24800 has 1 MA's), (54, 24845), (61, 24869), (72, 24956), (86, 25013), (96, 25058), (101, 25100), (105, 25124), (119, 25187), (142, 25226), (161, 25301), (166, 25331), (182, 25412), (189, 25448), (196, 25475), (218, 25601), (250, 25781),

Gene: Patos\_30 Start: 25228, Stop: 26352, Start Num: 40

Candidate Starts for Patos\_30:

(Start: 40 @25228 has 45 MA's), (42, 25234), (Start: 44 @25240 has 1 MA's), (54, 25285), (61, 25309), (72, 25396), (86, 25453), (96, 25498), (101, 25540), (105, 25564), (119, 25627), (142, 25666), (161, 25741), (166, 25771), (182, 25852), (189, 25888), (218, 26041), (232, 26122), (238, 26143), (250, 26221), (269, 26302),

Gene: Phives\_20 Start: 16011, Stop: 17453, Start Num: 37

Candidate Starts for Phives\_20:

(Start: 37 @16011 has 80 MA's), (52, 16071), (54, 16077), (64, 16134), (67, 16155), (85, 16248), (107, 16365), (119, 16413), (130, 16533), (147, 16752), (205, 17082), (222, 17184), (225, 17202), (270, 17421),

Gene: Picard\_19 Start: 14321, Stop: 15451, Start Num: 37

Candidate Starts for Picard\_19:

(Start: 37 @14321 has 80 MA's), (67, 14465), (71, 14489), (83, 14552), (94, 14600), (140, 14774), (151, 14810), (155, 14816), (184, 14957), (211, 15083), (215, 15095), (238, 15242),

Gene: Pixelle\_19 Start: 14954, Stop: 16396, Start Num: 37

Candidate Starts for Pixelle\_19:

(Start: 37 @14954 has 80 MA's), (52, 15014), (54, 15020), (64, 15077), (107, 15308), (119, 15356), (120, 15362), (130, 15476), (147, 15695), (205, 16025), (222, 16127), (225, 16145), (270, 16364),

Gene: Powerpuff\_19 Start: 14970, Stop: 16091, Start Num: 37

Candidate Starts for Powerpuff\_19:

(Start: 37 @14970 has 80 MA's), (52, 15030), (64, 15093), (67, 15114), (109, 15327), (120, 15378), (121, 15384), (181, 15606), (222, 15822), (225, 15840), (239, 15900),

Gene: PrairieDogTown\_20 Start: 16071, Stop: 17120, Start Num: 114

Candidate Starts for PrairieDogTown\_20:

(Start: 114 @16071 has 6 MA's), (128, 16176), (138, 16341), (145, 16407), (201, 16737), (208, 16773), (266, 17094),

Gene: Pumpkins\_19 Start: 15036, Stop: 16157, Start Num: 37

Candidate Starts for Pumpkins\_19:

(8, 14664), (11, 14709), (Start: 37 @15036 has 80 MA's), (66, 15171), (67, 15180), (83, 15270), (120, 15444), (121, 15450), (225, 15906),

Gene: Raleigh\_19 Start: 14995, Stop: 16095, Start Num: 36

Candidate Starts for Raleigh\_19:

(7, 14605), (14, 14719), (16, 14818), (28, 14962), (31, 14980), (Start: 36 @14995 has 4 MA's), (64, 15124), (67, 15145), (173, 15586), (234, 15898), (264, 16036), (271, 16075), (273, 16081),

Gene: Ranch\_29 Start: 24142, Stop: 25266, Start Num: 40

Candidate Starts for Ranch\_29:

(Start: 40 @24142 has 45 MA's), (42, 24148), (Start: 44 @24154 has 1 MA's), (54, 24199), (61, 24223), (72, 24310), (86, 24367), (96, 24412), (101, 24454), (105, 24478), (119, 24541), (142, 24580), (161, 24655), (166, 24685), (182, 24766), (189, 24802), (218, 24955), (232, 25036), (238, 25057), (250, 25135), (269, 25216),

Gene: RazorC\_27 Start: 23612, Stop: 24736, Start Num: 40

Candidate Starts for RazorC\_27:

(Start: 40 @23612 has 45 MA's), (42, 23618), (Start: 44 @23624 has 1 MA's), (54, 23669), (61, 23693), (72, 23780), (86, 23837), (96, 23882), (101, 23924), (105, 23948), (142, 24050), (161, 24125), (166, 24155), (182, 24236), (189, 24272), (218, 24425), (224, 24458), (250, 24605), (269, 24686),

Gene: Riduram\_28 Start: 23190, Stop: 24314, Start Num: 40

Candidate Starts for Riduram\_28:

(Start: 40 @23190 has 45 MA's), (42, 23196), (Start: 44 @23202 has 1 MA's), (54, 23247), (61, 23271), (72, 23358), (86, 23415), (96, 23460), (101, 23502), (105, 23526), (142, 23628), (161, 23703), (166, 23733), (182, 23814), (189, 23850), (218, 24003), (224, 24036), (250, 24183), (269, 24264),

Gene: Riparian\_29 Start: 22907, Stop: 24094, Start Num: 37

Candidate Starts for Riparian\_29:

(21, 22802), (22, 22808), (Start: 37 @22907 has 80 MA's), (43, 22934), (Start: 44 @22937 has 1 MA's), (56, 22982), (58, 22994), (61, 23003), (86, 23168), (105, 23279), (109, 23297), (136, 23375), (138, 23384), (142, 23399), (189, 23621), (192, 23633), (218, 23774), (219, 23777), (239, 23882), (246, 23927), (250, 23957), (257, 23981), (259, 23993), (261, 23996), (270, 24044), (276, 24083),

Gene: RockScotty\_19 Start: 14619, Stop: 16067, Start Num: 37

Candidate Starts for RockScotty\_19:

(Start: 37 @14619 has 80 MA's), (Start: 51 @14673 has 1 MA's), (120, 15027), (121, 15033), (180, 15579), (191, 15630), (228, 15825),

Gene: Rope\_29 Start: 23093, Stop: 24280, Start Num: 37

Candidate Starts for Rope\_29:

(21, 22988), (22, 22994), (Start: 37 @23093 has 80 MA's), (43, 23120), (Start: 44 @23123 has 1 MA's), (56, 23168), (58, 23180), (61, 23189), (86, 23354), (105, 23465), (109, 23483), (136, 23561), (138, 23570), (142, 23585), (148, 23588), (189, 23807), (192, 23819), (218, 23960), (219, 23963), (239, 24068), (246, 24113), (250, 24143), (257, 24167), (259, 24179), (261, 24182), (270, 24230), (276, 24269),

Gene: Rota\_28 Start: 25495, Stop: 26619, Start Num: 40

Candidate Starts for Rota\_28:

(Start: 40 @25495 has 45 MA's), (42, 25501), (Start: 44 @25507 has 1 MA's), (54, 25552), (61, 25576), (72, 25663), (86, 25720), (96, 25765), (101, 25807), (142, 25933), (161, 26008), (166, 26038), (182, 26119), (189, 26155), (218, 26308), (232, 26389), (238, 26410), (250, 26488), (269, 26569),

Gene: Rukungu\_29 Start: 25844, Stop: 26968, Start Num: 40

Candidate Starts for Rukungu\_29:

(Start: 40 @25844 has 45 MA's), (42, 25850), (Start: 44 @25856 has 1 MA's), (54, 25901), (61, 25925), (72, 26012), (86, 26069), (96, 26114), (101, 26156), (105, 26180), (119, 26243), (142, 26282), (161, 26357), (166, 26387), (182, 26468), (189, 26504), (218, 26657), (232, 26738), (238, 26759), (250, 26837), (269, 26918),

Gene: Rumi\_28 Start: 23223, Stop: 24347, Start Num: 40

Candidate Starts for Rumi\_28:

(Start: 40 @23223 has 45 MA's), (42, 23229), (Start: 44 @23235 has 1 MA's), (54, 23280), (61, 23304), (72, 23391), (86, 23448), (96, 23493), (101, 23535), (105, 23559), (142, 23661), (161, 23736), (166, 23766), (182, 23847), (189, 23883), (218, 24036), (224, 24069), (250, 24216), (269, 24297),

Gene: SV1\_19 Start: 14433, Stop: 15563, Start Num: 37

Candidate Starts for SV1\_19:

(33, 14418), (Start: 37 @14433 has 80 MA's), (67, 14577), (73, 14622), (78, 14646), (101, 14763), (140, 14886), (155, 14928), (156, 14937), (183, 15066), (197, 15123), (211, 15195), (215, 15207), (217, 15225), (222, 15276), (238, 15354),

Gene: Sabourin\_19 Start: 14526, Stop: 15974, Start Num: 37

Candidate Starts for Sabourin\_19:

(Start: 37 @14526 has 80 MA's), (Start: 51 @14580 has 1 MA's), (115, 14904), (120, 14934), (180, 15486), (228, 15732),

Gene: Sadboi\_29 Start: 25984, Stop: 27108, Start Num: 40

Candidate Starts for Sadboi\_29:

(Start: 40 @25984 has 45 MA's), (42, 25990), (Start: 44 @25996 has 1 MA's), (54, 26041), (61, 26065), (72, 26152), (86, 26209), (96, 26254), (101, 26296), (105, 26320), (119, 26383), (142, 26422), (161, 26497), (166, 26527), (182, 26608), (189, 26644), (218, 26797), (232, 26878), (238, 26899), (250,

26977), (269, 27058),

Gene: Sampudon\_29 Start: 26151, Stop: 27275, Start Num: 40

Candidate Starts for Sampudon\_29:

(Start: 40 @26151 has 45 MA's), (42, 26157), (Start: 44 @26163 has 1 MA's), (54, 26208), (61, 26232), (72, 26319), (86, 26376), (96, 26421), (101, 26463), (142, 26589), (161, 26664), (166, 26694), (182, 26775), (189, 26811), (218, 26964), (232, 27045), (238, 27066), (250, 27144), (269, 27225),

Gene: Schaffner\_19 Start: 15023, Stop: 16144, Start Num: 37

Candidate Starts for Schaffner\_19:

(Start: 37 @15023 has 80 MA's), (67, 15167), (83, 15257), (121, 15437), (225, 15893), (269, 16109),

Gene: Scotia\_21 Start: 16995, Stop: 18044, Start Num: 114

Candidate Starts for Scotia\_21:

(45, 16623), (106, 16965), (Start: 114 @16995 has 6 MA's), (118, 17013), (132, 17169), (133, 17196), (134, 17244), (138, 17265), (145, 17331), (149, 17412), (193, 17637), (201, 17661), (206, 17691), (208, 17697), (216, 17739), (233, 17856), (254, 17958), (266, 18018), (267, 18024),

Gene: Send513\_29 Start: 23449, Stop: 24636, Start Num: 37

Candidate Starts for Send513\_29:

(21, 23344), (22, 23350), (Start: 37 @23449 has 80 MA's), (43, 23476), (Start: 44 @23479 has 1 MA's), (56, 23524), (58, 23536), (61, 23545), (86, 23710), (105, 23821), (109, 23839), (136, 23917), (138, 23926), (142, 23941), (189, 24163), (192, 24175), (218, 24316), (219, 24319), (239, 24424), (246, 24469), (250, 24499), (257, 24523), (259, 24535), (261, 24538), (270, 24586), (276, 24625),

Gene: ShakeltOph\_18 Start: 13074, Stop: 14306, Start Num: 38

Candidate Starts for ShakeltOph\_18:

(Start: 38 @13074 has 7 MA's), (72, 13269), (77, 13293), (139, 13644), (171, 13800), (191, 13890), (213, 13989), (242, 14145), (256, 14226),

Gene: Sienna\_24 Start: 20204, Stop: 21337, Start Num: 40

Candidate Starts for Sienna\_24:

(Start: 40 @20204 has 45 MA's), (64, 20321), (67, 20342), (70, 20354), (72, 20375), (74, 20384), (80, 20417), (120, 20615), (169, 20765), (187, 20858), (198, 20903), (202, 20921), (207, 20951), (212, 20975), (240, 21131), (242, 21137), (246, 21173), (250, 21203), (252, 21209), (261, 21242), (267, 21281),

Gene: Simpson\_21 Start: 14919, Stop: 16040, Start Num: 37

Candidate Starts for Simpson\_21:

(Start: 37 @14919 has 80 MA's), (52, 14979), (64, 15042), (67, 15063), (109, 15276), (120, 15327), (121, 15333), (181, 15555), (222, 15771), (225, 15789), (239, 15849),

Gene: Skelbel\_20 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for Skelbel\_20:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: SoJo\_19 Start: 14651, Stop: 15748, Start Num: 37

Candidate Starts for SoJo\_19:

(1, 13649), (2, 13706), (3, 14051), (4, 14168), (7, 14255), (16, 14459), (19, 14516), (23, 14555), (Start: 37 @14651 has 80 MA's), (73, 14840), (100, 14975), (109, 15020), (115, 15041), (184, 15281), (211, 15407), (222, 15485), (240, 15569), (241, 15572), (263, 15680), (273, 15731),

Gene: Sonali\_18 Start: 18766, Stop: 19881, Start Num: 38

Candidate Starts for Sonali\_18:

(Start: 38 @18766 has 7 MA's), (104, 19117), (167, 19315), (169, 19327), (178, 19366), (189, 19420), (213, 19528), (231, 19651), (242, 19693), (261, 19804), (264, 19816), (268, 19846), (275, 19873),

Gene: Soondubu\_18 Start: 15573, Stop: 16658, Start Num: 37

Candidate Starts for Soondubu\_18:

(Start: 37 @15573 has 80 MA's), (48, 15627), (97, 15885), (174, 16146), (213, 16323), (218, 16368), (263, 16593), (266, 16620), (274, 16650),

Gene: Sooty\_19 Start: 14529, Stop: 15977, Start Num: 37

Candidate Starts for Sooty\_19:

(Start: 37 @14529 has 80 MA's), (Start: 51 @14583 has 1 MA's), (115, 14907), (120, 14937), (180, 15489), (228, 15735),

Gene: SpecialK\_19 Start: 14580, Stop: 15974, Start Num: 51

Candidate Starts for SpecialK\_19:

(Start: 37 @14526 has 80 MA's), (Start: 51 @14580 has 1 MA's), (120, 14934), (121, 14940), (180, 15486), (191, 15537), (228, 15732),

Gene: Spocter\_25 Start: 21152, Stop: 22249, Start Num: 37

Candidate Starts for Spocter\_25:

(35, 21146), (Start: 37 @21152 has 80 MA's), (62, 21254), (69, 21308), (74, 21347), (83, 21383), (90, 21404), (92, 21422), (165, 21695), (171, 21728), (179, 21761), (184, 21782), (211, 21908), (230, 22019), (241, 22073),

Gene: Stormer\_28 Start: 23223, Stop: 24347, Start Num: 40

Candidate Starts for Stormer\_28:

(Start: 40 @23223 has 45 MA's), (42, 23229), (Start: 44 @23235 has 1 MA's), (54, 23280), (61, 23304), (72, 23391), (86, 23448), (96, 23493), (101, 23535), (105, 23559), (142, 23661), (161, 23736), (166, 23766), (182, 23847), (189, 23883), (218, 24036), (224, 24069), (250, 24216), (269, 24297),

Gene: Stuu\_19 Start: 14619, Stop: 16067, Start Num: 37

Candidate Starts for Stuu\_19:

(Start: 37 @14619 has 80 MA's), (Start: 51 @14673 has 1 MA's), (115, 14997), (120, 15027), (180, 15579), (191, 15630), (228, 15825),

Gene: Subaru\_20 Start: 14901, Stop: 16022, Start Num: 37

Candidate Starts for Subaru\_20:

(Start: 37 @14901 has 80 MA's), (52, 14961), (54, 14967), (64, 15024), (67, 15045), (120, 15309), (225, 15771),

Gene: Sunshine23\_20 Start: 18778, Stop: 19893, Start Num: 38

Candidate Starts for Sunshine23\_20:

(Start: 38 @18778 has 7 MA's), (104, 19129), (167, 19327), (169, 19339), (175, 19369), (178, 19378), (189, 19432), (213, 19540), (222, 19615), (231, 19663), (242, 19705), (261, 19816), (264, 19828), (268, 19858), (275, 19885),

Gene: Suzy\_24 Start: 21365, Stop: 22498, Start Num: 40

Candidate Starts for Suzy\_24:

(Start: 40 @21365 has 45 MA's), (64, 21482), (67, 21503), (72, 21536), (74, 21545), (105, 21707), (169, 21926), (182, 21995), (195, 22055), (198, 22064), (202, 22082), (205, 22106), (212, 22136), (240, 22292), (242, 22298), (250, 22364), (252, 22370), (261, 22403), (267, 22442), (272, 22457),

Gene: Tallboi\_19 Start: 14933, Stop: 16054, Start Num: 37

Candidate Starts for Tallboi\_19:

(Start: 37 @14933 has 80 MA's), (52, 14993), (54, 14999), (64, 15056), (67, 15077), (85, 15170), (120, 15341), (121, 15347), (181, 15569), (222, 15785), (225, 15803),

Gene: Tbone\_19 Start: 14923, Stop: 16044, Start Num: 37

Candidate Starts for Tbone\_19:

(Start: 37 @14923 has 80 MA's), (52, 14983), (64, 15046), (67, 15067), (109, 15280), (120, 15331), (121, 15337), (181, 15559), (222, 15775), (225, 15793), (239, 15853),

Gene: Terapin\_24 Start: 20204, Stop: 21337, Start Num: 40

Candidate Starts for Terapin\_24:

(Start: 40 @20204 has 45 MA's), (64, 20321), (67, 20342), (70, 20354), (72, 20375), (74, 20384), (80, 20417), (105, 20546), (120, 20615), (169, 20765), (182, 20834), (187, 20858), (198, 20903), (202, 20921), (205, 20945), (212, 20975), (240, 21131), (242, 21137), (250, 21203), (252, 21209), (261, 21242), (267, 21281),

Gene: TforTroy\_19 Start: 15054, Stop: 16175, Start Num: 37

Candidate Starts for TforTroy\_19:

(Start: 37 @15054 has 80 MA's), (66, 15189), (67, 15198), (83, 15288), (120, 15462), (121, 15468), (140, 15501), (225, 15924),

Gene: ThursdayNight\_17 Start: 13779, Stop: 14744, Start Num: 64

Candidate Starts for ThursdayNight\_17:

(Start: 37 @13656 has 80 MA's), (Start: 51 @13710 has 1 MA's), (64, 13779), (199, 14334), (222, 14475), (225, 14493),

Gene: Tian\_19 Start: 14951, Stop: 16393, Start Num: 37

Candidate Starts for Tian\_19:

(Start: 37 @14951 has 80 MA's), (52, 15011), (54, 15017), (64, 15074), (67, 15095), (107, 15305), (119, 15353), (130, 15473), (147, 15692), (205, 16022), (222, 16124), (225, 16142), (270, 16361),

Gene: Tillicus\_28 Start: 24557, Stop: 25681, Start Num: 40

Candidate Starts for Tillicus\_28:

(Start: 40 @24557 has 45 MA's), (42, 24563), (54, 24614), (61, 24638), (72, 24725), (86, 24782), (96, 24827), (101, 24869), (103, 24890), (105, 24893), (119, 24956), (142, 24995), (148, 24998), (161, 25070), (166, 25100), (182, 25181), (189, 25217), (218, 25370), (238, 25472), (240, 25478), (250, 25550),

Gene: ToastyFinz\_18 Start: 14328, Stop: 15425, Start Num: 37

Candidate Starts for ToastyFinz\_18:

(24, 14241), (Start: 37 @14328 has 80 MA's), (41, 14349), (48, 14376), (54, 14394), (71, 14496), (100, 14652), (109, 14697), (174, 14916), (175, 14919), (209, 15075), (211, 15084), (240, 15246), (241, 15249), (243, 15264), (273, 15408),

Gene: Tubberson\_19 Start: 14650, Stop: 15747, Start Num: 37

Candidate Starts for Tubberson\_19:

(Start: 37 @14650 has 80 MA's), (73, 14839), (100, 14974), (109, 15019), (115, 15040), (184, 15280), (211, 15406), (222, 15484), (234, 15547), (240, 15568), (241, 15571), (263, 15679), (273, 15730),

Gene: Tuck\_20 Start: 16127, Stop: 17569, Start Num: 37

Candidate Starts for Tuck\_20:

(Start: 37 @16127 has 80 MA's), (52, 16187), (54, 16193), (64, 16250), (107, 16481), (121, 16541), (145, 16835), (146, 16856), (225, 17318), (241, 17384),

Gene: Turab\_19 Start: 14930, Stop: 16051, Start Num: 37

Candidate Starts for Turab\_19:

(Start: 37 @14930 has 80 MA's), (52, 14990), (64, 15053), (67, 15074), (120, 15338), (153, 15422), (222, 15782), (225, 15800), (239, 15860),

Gene: Tutumahutu\_19 Start: 14970, Stop: 16091, Start Num: 37

Candidate Starts for Tutumahutu\_19:

(Start: 37 @14970 has 80 MA's), (52, 15030), (64, 15093), (67, 15114), (109, 15327), (120, 15378), (121, 15384), (181, 15606), (222, 15822), (225, 15840), (239, 15900),

Gene: VroomVroom\_18 Start: 13087, Stop: 14322, Start Num: 38

Candidate Starts for VroomVroom\_18:

(Start: 38 @13087 has 7 MA's), (72, 13282), (77, 13306), (123, 13528), (139, 13657), (171, 13813), (191, 13906), (213, 14005), (242, 14161), (256, 14242),

Gene: Warda\_19 Start: 14915, Stop: 16036, Start Num: 37

Candidate Starts for Warda\_19:

(Start: 37 @14915 has 80 MA's), (52, 14975), (64, 15038), (67, 15059), (109, 15272), (120, 15323), (121, 15329), (181, 15551), (222, 15767), (225, 15785), (239, 15845),

Gene: Weiss13\_29 Start: 23139, Stop: 24326, Start Num: 37

Candidate Starts for Weiss13\_29:

(21, 23034), (22, 23040), (Start: 37 @23139 has 80 MA's), (43, 23166), (Start: 44 @23169 has 1 MA's), (56, 23214), (58, 23226), (61, 23235), (86, 23400), (105, 23511), (109, 23529), (136, 23607), (138, 23616), (142, 23631), (189, 23853), (192, 23865), (218, 24006), (219, 24009), (239, 24114), (246, 24159), (250, 24189), (257, 24213), (259, 24225), (261, 24228), (270, 24276), (276, 24315),

Gene: Wojtek\_28 Start: 24861, Stop: 25985, Start Num: 40

Candidate Starts for Wojtek\_28:

(Start: 40 @24861 has 45 MA's), (42, 24867), (Start: 44 @24873 has 1 MA's), (54, 24918), (61, 24942), (72, 25029), (86, 25086), (96, 25131), (101, 25173), (105, 25197), (119, 25260), (142, 25299), (161, 25374), (166, 25404), (182, 25485), (189, 25521), (196, 25548), (218, 25674), (250, 25854),

Gene: Xenia2\_29 Start: 24947, Stop: 26074, Start Num: 40

Candidate Starts for Xenia2\_29:

(Start: 40 @24947 has 45 MA's), (76, 25139), (86, 25172), (94, 25208), (96, 25217), (101, 25259), (122, 25358), (142, 25385), (148, 25388), (176, 25538), (184, 25583), (185, 25586), (189, 25607), (206, 25685), (218, 25760), (246, 25910), (250, 25940), (257, 25964), (267, 26015),

Gene: Yang\_19 Start: 15026, Stop: 16147, Start Num: 37

Candidate Starts for Yang\_19:

(Start: 37 @15026 has 80 MA's), (67, 15170), (83, 15260), (110, 15386), (222, 15878), (225, 15896), (269, 16112),

Gene: Yelo\_29 Start: 23432, Stop: 24619, Start Num: 37

Candidate Starts for Yelo\_29:

(21, 23327), (22, 23333), (Start: 37 @23432 has 80 MA's), (43, 23459), (Start: 44 @23462 has 1 MA's), (56, 23507), (58, 23519), (61, 23528), (86, 23693), (105, 23804), (109, 23822), (136, 23900), (138, 23909), (142, 23924), (189, 24146), (192, 24158), (218, 24299), (219, 24302), (239, 24407), (246, 24452), (250, 24482), (257, 24506), (259, 24518), (261, 24521), (270, 24569), (276, 24608),

Gene: YesChef\_19 Start: 14970, Stop: 16091, Start Num: 37

Candidate Starts for YesChef\_19:

(Start: 37 @14970 has 80 MA's), (52, 15030), (64, 15093), (67, 15114), (109, 15327), (120, 15378), (121, 15384), (181, 15606), (222, 15822), (225, 15840), (239, 15900),

Gene: Yikes\_30 Start: 26236, Stop: 27360, Start Num: 40

Candidate Starts for Yikes\_30:

(Start: 40 @26236 has 45 MA's), (42, 26242), (Start: 44 @26248 has 1 MA's), (54, 26293), (61, 26317), (72, 26404), (86, 26461), (96, 26506), (101, 26548), (142, 26674), (161, 26749), (166, 26779), (182, 26860), (189, 26896), (218, 27049), (232, 27130), (238, 27151), (250, 27229), (269, 27310),

Gene: Zany\_28 Start: 25757, Stop: 26881, Start Num: 40

Candidate Starts for Zany\_28:

(Start: 40 @25757 has 45 MA's), (42, 25763), (Start: 44 @25769 has 1 MA's), (54, 25814), (61, 25838), (72, 25925), (86, 25982), (96, 26027), (101, 26069), (105, 26093), (119, 26156), (142, 26195), (161, 26270), (166, 26300), (182, 26381), (189, 26417), (218, 26570), (250, 26750), (269, 26831),

Gene: Zenon\_30 Start: 23451, Stop: 24638, Start Num: 37

Candidate Starts for Zenon\_30:

(21, 23346), (22, 23352), (Start: 37 @23451 has 80 MA's), (43, 23478), (Start: 44 @23481 has 1 MA's), (56, 23526), (58, 23538), (61, 23547), (86, 23712), (105, 23823), (109, 23841), (136, 23919), (138, 23928), (142, 23943), (189, 24165), (192, 24177), (218, 24318), (219, 24321), (239, 24426), (246, 24471), (250, 24501), (257, 24525), (259, 24537), (261, 24540), (270, 24588), (276, 24627),

Gene: pZL12\_48c Start: 37533, Stop: 36430, Start Num: 37

Candidate Starts for pZL12\_48c:

(Start: 37 @37533 has 80 MA's), (65, 37407), (82, 37308), (89, 37293), (102, 37194), (180, 36936), (193, 36876), (201, 36846), (247, 36582),