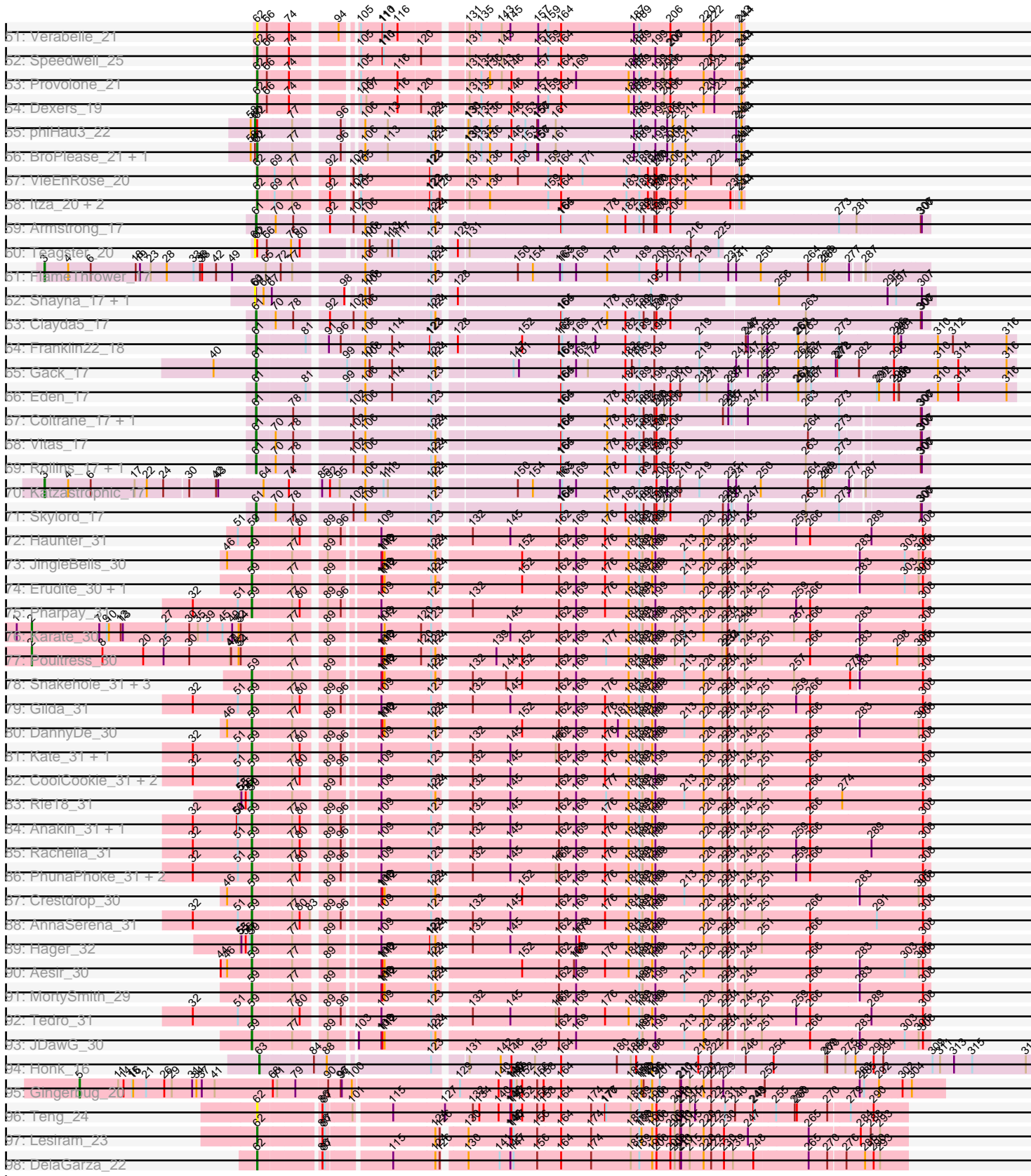


# Pham 196330

1: Calburn_20 + 13	86			105	111	120	131	136	153	164	172	178	187	194	200	209	223		
2: Asten_20 + 10	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
3: Lorelei_20 + 2	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
4: BryanRecycles_21 + 5	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
5: Lika_20 + 2	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
6: Danzina_21	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
7: Datfran_21 + 3	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
8: Brataylor_21	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
9: Maneekul_20 + 3	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
10: RedBear_22 + 2	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
11: EnochSoames_22	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
12: Hippo_20	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
13: Nanodon_22	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
14: SarahRose_20	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
15: Lannister_21	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
16: Zemiya_21	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
17: Amethyst_20	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
18: TrvxScot_19	86			94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
19: Issmi_21	86	81		94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
20: Paolo_22 + 2	86	75		94	108	111	120	131	136	146	151	161	173	178	187	194	200	209	223
21: Bowden_21 + 1	86			96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
22: Superstar_23	86			96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
23: Paedore_20 + 1	86		80	96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
24: Haizum_20 + 1	86			96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
25: Animus_21 + 1	86		80	96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
26: Hank144_21	86		80	96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
27: ELB20_19 + 1	86		80	96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
28: Nismkigoi_20	86	75		96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
29: Marav_23	86			96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
30: Puginator_22	86			96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
31: Omar_21	86		80	96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
32: Daudau_20	86		82	96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
33: Diane_20	86			96	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
34: BartholomewSD_22 + 1	86			92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
35: Triumph_22	86			92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
36: GimDinner_20	86			92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
37: Andris_20	86		80	92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
38: Pabito_20	86			92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
39: Caelum_21	86			92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
40: Thestral_21	86			92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
41: Janus_21	86	74		92	108	113	121	130	136	146	158	161	173	178	187	194	200	209	223
42: Vanseggeien_25	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
43: Yosif_21	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
44: Verse_20 + 1	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
45: Aisaber_21 + 1	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
46: Celery_23	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
47: Pavo_21 + 1	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
48: Saitant_20	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
49: phiCAIM_21	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223
50: ElGato_21	86	74		94	108	116	121	130	136	146	151	161	173	178	187	194	200	209	223

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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 196330 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196330 has 165 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Caliburn\_20, Esperer\_20, BeardedLady\_21, Nerdos\_20, Leviticus\_20, Bovely\_20, Unstoppable\_20, SunsetPointe\_20, Aaronocolus\_20, Phettuccine\_20, Hydra\_22, Indigo\_20, Legacy\_20, Ozzie\_20
- Track 2 : Asten\_20, Snorlax\_20, Dwayne\_20, Werner\_20, Chucky\_20, BarryBee\_22, Emaanora\_22, TagePhighter\_21, Whatever\_20, Triste\_20, OzzyJ\_21
- Track 3 : Lorelei\_20, Nabi\_20, Rana\_20
- Track 4 : BryanRecycles\_21, Oliynyk\_21, Izzy\_21, Jash\_21, Eddasa\_21, Rusticus\_21
- Track 5 : Lika\_20, Sujidade\_21, Godpower\_21
- Track 6 : Danzina\_21
- Track 7 : Dattran\_21, Celeste\_20, Goby\_20, Toma\_20
- Track 8 : Brataylor\_21
- Track 9 : Maneekul\_20, Yasdnil\_20, Ejemplo\_20, TuanPN\_20
- Track 10 : RedBear\_22, South40\_21, Katalie\_21
- Track 11 : EnochSoames\_22
- Track 12 : Hippo\_20
- Track 13 : Nanodon\_22
- Track 14 : SarahRose\_20
- Track 15 : Lannister\_21
- Track 16 : Zemlya\_21
- Track 17 : Amethyst\_20
- Track 18 : TrvxScott\_19
- Track 19 : Issmi\_21
- Track 20 : Paolo\_22, Zainub\_22, Jevington\_22
- Track 21 : Bowden\_21, TinaBelcher\_20
- Track 22 : Superstar\_23
- Track 23 : Paedore\_20, Loofah\_21
- Track 24 : Haizum\_20, Tefunt\_20
- Track 25 : Animus\_21, SqueakyClean\_21
- Track 26 : Hank144\_21
- Track 27 : ELB20\_19, R4\_20
- Track 28 : Nishikigoi\_20
- Track 29 : Marav\_23
- Track 30 : Puginator\_22
- Track 31 : Omar\_21
- Track 32 : Daudau\_20
- Track 33 : Diane\_20

- Track 34 : BartholomewSD\_22, Alvy\_22
- Track 35 : Triumph\_22
- Track 36 : GirlDinner\_20
- Track 37 : Andris\_20
- Track 38 : Pablito\_20
- Track 39 : Caelum\_21
- Track 40 : Thestral\_21
- Track 41 : Janus\_21
- Track 42 : Vanseggelen\_25
- Track 43 : Yosif\_21
- Track 44 : Verse\_20, Amela\_20
- Track 45 : Alsaber\_21, Kaine\_20
- Track 46 : Celery\_23
- Track 47 : Pavo\_21, Conan\_21
- Track 48 : Saftant\_20
- Track 49 : phiCAM\_21
- Track 50 : ElGato\_21
- Track 51 : Verabelle\_21
- Track 52 : Speedwell\_25
- Track 53 : Provolone\_21
- Track 54 : Dexas\_19
- Track 55 : phiHau3\_22
- Track 56 : BroPlease\_21, GreenWeasel\_22
- Track 57 : VieEnRose\_20
- Track 58 : Itza\_20, Celia\_20, Urza\_20
- Track 59 : Armstrong\_17
- Track 60 : Teagster\_20
- Track 61 : FlameThrower\_17
- Track 62 : Shayna\_17, SunnyD\_19
- Track 63 : Clayda5\_17
- Track 64 : Franklin22\_18
- Track 65 : Gack\_17
- Track 66 : Eden\_17
- Track 67 : Coltrane\_17, Brahms\_17
- Track 68 : Vitas\_17
- Track 69 : Rollins\_17, Bernstein\_17
- Track 70 : Katzastrophic\_17
- Track 71 : Skylord\_17
- Track 72 : Haunter\_31
- Track 73 : JingleBells\_30
- Track 74 : Erudite\_30, Dauntless\_30
- Track 75 : Pharpay\_31
- Track 76 : Karate\_30
- Track 77 : Poultruss\_30
- Track 78 : Snakehole\_31, Hiddenleaf\_30, FreddieHg\_30, Chivey\_30
- Track 79 : Gilda\_31
- Track 80 : DannyDe\_30
- Track 81 : Kate\_31, OverHedge\_31
- Track 82 : CoolCookie\_31, Krampus\_31, Potty\_31
- Track 83 : Rie18\_31
- Track 84 : Anakin\_31, NarutoRun\_31
- Track 85 : Rachella\_31
- Track 86 : PhunaPhoke\_31, Cybele\_31, Neptune\_31

- Track 87 : Crestdrop\_30
- Track 88 : AnnaSerena\_31
- Track 89 : Hager\_32
- Track 90 : Aesir\_30
- Track 91 : MortySmith\_29
- Track 92 : Tedro\_31
- Track 93 : JDawG\_30
- Track 94 : Honk\_16
- Track 95 : Gingerbug\_20
- Track 96 : Teng\_24
- Track 97 : Lesiram\_23
- Track 98 : DelaGarza\_22

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

The start number called the most often in the published annotations is 62, it was called in 107 of the 154 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aaronocolus\_20, Alsaber\_21, Alvy\_22, Amela\_20, Amethyst\_20, Andris\_20, Animus\_21, Asten\_20, BarryBee\_22, BartholomewSD\_22, BeardedLady\_21, Bovely\_20, Bowden\_21, Brataylor\_21, BroPlease\_21, BryanRecycles\_21, Caelum\_21, Caliburn\_20, Celery\_23, Celeste\_20, Celia\_20, Chucky\_20, Conan\_21, Danzina\_21, Dattran\_21, Daudau\_20, DelaGarza\_22, Dexers\_19, Diane\_20, Dwayne\_20, ELB20\_19, Eddasa\_21, Ejemplo\_20, ElGato\_21, Emaanora\_22, EnochSoames\_22, Esperer\_20, GirlDinner\_20, Goby\_20, Godpower\_21, GreenWeasel\_22, Haizum\_20, Hank144\_21, Hippo\_20, Hydra\_22, Indigo\_20, Issmi\_21, Itza\_20, Izzy\_21, Janus\_21, Jash\_21, Jevington\_22, Kaine\_20, Katalie\_21, Lannister\_21, Legacy\_20, Lesiram\_23, Leviticus\_20, Lika\_20, Loofah\_21, Lorelei\_20, Maneekul\_20, Marav\_23, Nabi\_20, Nanodon\_22, Nerdos\_20, Nishikigoi\_20, Oliynyk\_21, Omar\_21, Ozzie\_20, OzzyJ\_21, Pablito\_20, Paedore\_20, Paolo\_22, Pavo\_21, Phettuccine\_20, Provolone\_21, Puginator\_22, R4\_20, Rana\_20, RedBear\_22, Rusticus\_21, Saftant\_20, SarahRose\_20, Snorlax\_20, South40\_21, Speedwell\_25, SqueakyClean\_21, Sujidade\_21, SunsetPointe\_20, Superstar\_23, TagePighter\_21, Tefunt\_20, Teng\_24, Thestral\_21, TinaBelcher\_20, Toma\_20, Triste\_20, Triumph\_22, TrvxScott\_19, TuanPN\_20, Unstoppable\_20, Urza\_20, Vanseggelen\_25, Verabelle\_21, Verse\_20, VieEnRose\_20, Werner\_20, Whatever\_20, Yasdnil\_20, Yosif\_21, Zainub\_22, Zemlya\_21,

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

- Teagster\_20, phiCAM\_21, phiHau3\_22,

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

- Aesir\_30, Anakin\_31, AnnaSerena\_31, Armstrong\_17, Bernstein\_17, Brahms\_17, Chivey\_30, Clayda5\_17, Coltrane\_17, CoolCookie\_31, Crestdrop\_30, Cybele\_31, DannyDe\_30, Dauntless\_30, Eden\_17, Erudite\_30, FlameThrower\_17, Franklin22\_18, FreddieHg\_30, Gack\_17, Gilda\_31, Gingerbug\_20, Hager\_32, Haunter\_31, Hiddenleaf\_30, Honk\_16, JDawG\_30, JingleBells\_30, Karate\_30, Kate\_31, Katzastrophic\_17, Krampus\_31, MortySmith\_29, NarutoRun\_31, Neptune\_31, OverHedge\_31, Pharpay\_31, PhunaPhoke\_31, Potty\_31, Poultruss\_30,

Rachella\_31, Rie18\_31, Rollins\_17, Shayna\_17, Skylord\_17, Snakehole\_31, SunnyD\_19, Tedro\_31, Vitas\_17,

### Summary by start number:

#### Start 2:

- Found in 2 of 165 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Karate\_30 (EF), Poultruss\_30 (EF),

#### Start 3:

- Found in 2 of 165 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FlameThrower\_17 (EB), Katzastrophic\_17 (EB),

#### Start 5:

- Found in 1 of 165 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gingerbug\_20 (GF),

#### Start 59:

- Found in 30 of 165 ( 18.2% ) of genes in pham
- Manual Annotations of this start: 29 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir\_30 (EF), Anakin\_31 (EF), AnnaSerena\_31 (EF), Chivey\_30 (EF), CoolCookie\_31 (EF), Crestdrop\_30 (EF), Cybele\_31 (EF), DannyDe\_30 (EF), Dauntless\_30 (EF), Erudite\_30 (EF), FreddieHg\_30 (EF), Gilda\_31 (EF), Hager\_32 (EF), Haunter\_31 (EF), Hiddenleaf\_30 (EF), JDawG\_30 (EF), JingleBells\_30 (EF), Kate\_31 (EF), Krampus\_31 (EF), MortySmith\_29 (EF), NarutoRun\_31 (EF), Neptune\_31 (EF), OverHedge\_31 (EF), Pharpay\_31 (EF), PhunaPhoke\_31 (EF), Potty\_31 (EF), Rachella\_31 (EF), Rie18\_31 (EF), Snakehole\_31 (EF), Tedro\_31 (EF),

#### Start 60:

- Found in 6 of 165 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Shayna\_17 (EB), SunnyD\_19 (EB), Teagster\_20 (EB), phiHau3\_22 (BD4),

#### Start 61:

- Found in 13 of 165 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 11 of 154
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Armstrong\_17 (EB), Bernstein\_17 (EB), Brahms\_17 (EB), Clayda5\_17 (EB), Coltrane\_17 (EB), Eden\_17 (EB), Franklin22\_18 (EB), Gack\_17 (EB), Rollins\_17 (EB), Skylord\_17 (EB), Vitas\_17 (EB),

#### Start 62:

- Found in 116 of 165 ( 70.3% ) of genes in pham
- Manual Annotations of this start: 107 of 154
- Called 97.4% of time when present
- Phage (with cluster) where this start called: Aaronocolus\_20 (BD1), Alsaber\_21 (BD3), Alvy\_22 (BD2), Amela\_20 (BD3), Amethyst\_20 (BD2), Andris\_20 (BD2), Animus\_21 (BD2), Asten\_20 (BD1), BarryBee\_22 (BD1), BartholomewSD\_22 (BD2), BeardedLady\_21 (BD1), Bovely\_20 (BD1), Bowden\_21 (BD2), Brataylor\_21 (BD1), BroPlease\_21 (BD4), BryanRecycles\_21 (BD1), Caelum\_21 (BD2), Caliburn\_20 (BD1), Celery\_23 (BD3), Celeste\_20 (BD1), Celia\_20 (BD6), Chucky\_20 (BD1), Conan\_21 (BD3), Danzina\_21 (BD1), Dattran\_21 (BD1), Daudau\_20 (BD2), DelaGarza\_22 (GF), Dexers\_19 (BD3), Diane\_20 (BD2), Dwayne\_20 (BD1), ELB20\_19 (BD2), Eddasa\_21 (BD1), Ejemplo\_20 (BD1), ElGato\_21 (BD3), Emaanora\_22 (BD1), EnochSoames\_22 (BD1), Esperer\_20 (BD1), GirlDinner\_20 (BD2), Goby\_20 (BD1), Godpower\_21 (BD1), GreenWeasel\_22 (BD4), Haizum\_20 (BD2), Hank144\_21 (BD2), Hippo\_20 (BD1), Hydra\_22 (BD1), Indigo\_20 (BD1), Issmi\_21 (BD2), Itza\_20 (BD6), Izzy\_21 (BD1), Janus\_21 (BD2), Jash\_21 (BD1), Jevington\_22 (BD2), Kaine\_20 (BD3), Katalie\_21 (BD1), Lannister\_21 (BD1), Legacy\_20 (BD1), Lesiram\_23 (GF), Leviticus\_20 (BD1), Lika\_20 (BD1), Loofah\_21 (BD2), Lorelei\_20 (BD1), Maneekul\_20 (BD1), Marav\_23 (BD2), Nabi\_20 (BD1), Nanodon\_22 (BD1), Nerdos\_20 (BD1), Nishikigoi\_20 (BD2), Oliynyk\_21 (BD1), Omar\_21 (BD2), Ozzie\_20 (BD1), OzzyJ\_21 (BD1), Pablito\_20 (BD2), Paedore\_20 (BD2), Paolo\_22 (BD2), Pavo\_21 (BD3), Phettuccine\_20 (BD1), Provolone\_21 (BD3), Puginator\_22 (BD2), R4\_20 (BD2), Rana\_20 (BD1), RedBear\_22 (BD1), Rusticus\_21 (BD1), Saftant\_20 (BD3), SarahRose\_20 (BD1), Snorlax\_20 (BD1), South40\_21 (BD1), Speedwell\_25 (BD3), SqueakyClean\_21 (BD2), Sujidade\_21 (BD1), SunsetPointe\_20 (BD1), Superstar\_23 (BD2), TagePhighter\_21 (BD1), Tefunt\_20 (BD2), Teng\_24 (GF), Thestral\_21 (BD2), TinaBelcher\_20 (BD2), Toma\_20 (BD1), Triste\_20 (BD1), Triumph\_22 (BD2), TrvxScott\_19 (BD2), TuanPN\_20 (BD1), Unstoppable\_20 (BD1), Urza\_20 (BD6), Vanseggelen\_25 (BD3), Verabelle\_21 (BD3), Verse\_20 (BD3), VieEnRose\_20 (BD6), Werner\_20 (BD1), Whatever\_20 (BD1), Yasdniil\_20 (BD1), Yosif\_21 (BD3), Zainub\_22 (BD2), Zemlya\_21 (BD1),

Start 63:

- Found in 1 of 165 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Honk\_16 (EH),

Start 105:

- Found in 102 of 165 ( 61.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.0% of time when present
- Phage (with cluster) where this start called: phiCAM\_21 (BD3),

### Summary by clusters:

There are 9 clusters represented in this pham: EH, BD4, EF, EB, GF, BD6, BD1, BD3, BD2,

Info for manual annotations of cluster BD1:

- Start number 62 was manually annotated 55 times for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 62 was manually annotated 32 times for cluster BD2.

Info for manual annotations of cluster BD3:

- Start number 62 was manually annotated 12 times for cluster BD3.

Info for manual annotations of cluster BD4:

- Start number 60 was manually annotated 1 time for cluster BD4.
- Start number 62 was manually annotated 2 times for cluster BD4.

Info for manual annotations of cluster BD6:

- Start number 62 was manually annotated 4 times for cluster BD6.

Info for manual annotations of cluster EB:

- Start number 3 was manually annotated 2 times for cluster EB.
- Start number 61 was manually annotated 11 times for cluster EB.

Info for manual annotations of cluster EF:

- Start number 2 was manually annotated 2 times for cluster EF.
- Start number 59 was manually annotated 29 times for cluster EF.

Info for manual annotations of cluster EH:

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

Info for manual annotations of cluster GF:

- Start number 5 was manually annotated 1 time for cluster GF.
- Start number 62 was manually annotated 2 times for cluster GF.

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

Gene: Aaronocolus\_20 Start: 15854, Stop: 17068, Start Num: 62

Candidate Starts for Aaronocolus\_20:

(Start: 62 @15854 has 107 MA's), (66, 15881), (105, 16064), (111, 16127), (120, 16226), (123, 16253), (131, 16322), (135, 16352), (153, 16472), (164, 16571), (186, 16769), (187, 16775), (194, 16814), (200, 16838), (205, 16865), (206, 16874), (212, 16907), (220, 16967), (223, 16997), (241, 17045), (243, 17054), (244, 17060),

Gene: Aesir\_30 Start: 18424, Stop: 20193, Start Num: 59

Candidate Starts for Aesir\_30:

(44, 18337), (46, 18355), (Start: 59 @18424 has 29 MA's), (77, 18526), (89, 18589), (109, 18712), (110, 18715), (112, 18721), (123, 18850), (124, 18862), (152, 19075), (162, 19177), (168, 19219), (169, 19225), (176, 19306), (184, 19372), (189, 19402), (191, 19411), (196, 19438), (199, 19447), (213, 19528), (220, 19582), (227, 19633), (234, 19648), (245, 19684), (266, 19867), (283, 19996), (303, 20122), (305, 20161), (308, 20173),

Gene: Alsaber\_21 Start: 16538, Stop: 17755, Start Num: 62

Candidate Starts for Alsaber\_21:

(Start: 62 @16538 has 107 MA's), (66, 16565), (74, 16616), (105, 16748), (107, 16763), (116, 16850), (120, 16910), (131, 17006), (135, 17036), (143, 17093), (146, 17117), (157, 17192), (159, 17219), (164, 17255), (184, 17444), (187, 17459), (189, 17474), (199, 17519), (203, 17540), (206, 17558), (220, 17651), (223, 17681), (243, 17741), (244, 17747),



Gene: Alvy\_22 Start: 15862, Stop: 17073, Start Num: 62

Candidate Starts for Alvy\_22:

(Start: 62 @15862 has 107 MA's), (105, 16072), (106, 16084), (107, 16087), (113, 16147), (123, 16261), (125, 16276), (136, 16384), (146, 16441), (148, 16453), (156, 16513), (167, 16600), (169, 16621), (181, 16738), (187, 16783), (189, 16798), (203, 16864), (206, 16882), (214, 16924), (217, 16951), (220, 16975), (243, 17059), (244, 17065),

Gene: Amela\_20 Start: 16831, Stop: 18048, Start Num: 62

Candidate Starts for Amela\_20:

(Start: 62 @16831 has 107 MA's), (66, 16858), (74, 16909), (94, 17011), (105, 17041), (110, 17101), (116, 17143), (120, 17203), (131, 17299), (135, 17329), (143, 17386), (145, 17407), (157, 17485), (164, 17548), (187, 17752), (189, 17767), (203, 17833), (206, 17851), (220, 17944), (223, 17974), (243, 18034), (244, 18040),

Gene: Amethyst\_20 Start: 16313, Stop: 17527, Start Num: 62

Candidate Starts for Amethyst\_20:

(Start: 62 @16313 has 107 MA's), (66, 16340), (102, 16517), (106, 16535), (107, 16538), (113, 16598), (123, 16712), (136, 16835), (146, 16892), (181, 17189), (187, 17234), (200, 17297), (220, 17426), (241, 17504), (243, 17513), (244, 17519),

Gene: Anakin\_31 Start: 18678, Stop: 20456, Start Num: 59

Candidate Starts for Anakin\_31:

(32, 18513), (50, 18636), (51, 18639), (Start: 59 @18678 has 29 MA's), (77, 18780), (80, 18801), (89, 18843), (96, 18879), (109, 18966), (123, 19104), (132, 19194), (145, 19296), (162, 19431), (169, 19479), (176, 19560), (184, 19626), (189, 19656), (191, 19665), (196, 19692), (199, 19701), (220, 19836), (227, 19887), (234, 19902), (245, 19938), (251, 19986), (266, 20121), (308, 20436),

Gene: Andris\_20 Start: 15567, Stop: 16778, Start Num: 62

Candidate Starts for Andris\_20:

(Start: 62 @15567 has 107 MA's), (92, 15723), (105, 15777), (106, 15789), (107, 15792), (113, 15852), (123, 15966), (125, 15981), (136, 16089), (146, 16146), (153, 16185), (156, 16218), (159, 16248), (164, 16284), (167, 16305), (181, 16443), (187, 16488), (189, 16503), (199, 16548), (200, 16551), (205, 16578), (206, 16587), (220, 16680), (243, 16764), (244, 16770),

Gene: Animus\_21 Start: 15903, Stop: 17114, Start Num: 62

Candidate Starts for Animus\_21:

(Start: 62 @15903 has 107 MA's), (105, 16113), (106, 16125), (107, 16128), (113, 16188), (114, 16200), (123, 16302), (125, 16317), (130, 16368), (156, 16554), (164, 16620), (167, 16641), (181, 16779), (187, 16824), (189, 16839), (199, 16884), (200, 16887), (205, 16914), (206, 16923), (220, 17016), (243, 17100), (244, 17106),

Gene: AnnaSerena\_31 Start: 18687, Stop: 20465, Start Num: 59

Candidate Starts for AnnaSerena\_31:

(32, 18522), (51, 18648), (Start: 59 @18687 has 29 MA's), (77, 18789), (80, 18810), (83, 18831), (89, 18852), (96, 18888), (109, 18975), (123, 19113), (132, 19203), (145, 19305), (162, 19440), (169, 19488), (176, 19569), (184, 19635), (189, 19665), (191, 19674), (196, 19701), (199, 19710), (220, 19845), (227, 19896), (234, 19911), (245, 19947), (251, 19995), (266, 20130), (291, 20316), (308, 20445),

Gene: Armstrong\_17 Start: 12466, Stop: 14193, Start Num: 61

Candidate Starts for Armstrong\_17:

(Start: 61 @12466 has 11 MA's), (70, 12514), (78, 12559), (92, 12625), (102, 12682), (106, 12712), (123, 12886), (124, 12898), (164, 13204), (165, 13207), (178, 13333), (182, 13384), (189, 13423),

(192, 13435), (198, 13465), (200, 13471), (206, 13507), (273, 13963), (281, 14011), (306, 14167), (307, 14170),

Gene: Asten\_20 Start: 15820, Stop: 17031, Start Num: 62

Candidate Starts for Asten\_20:

(Start: 62 @15820 has 107 MA's), (105, 16030), (106, 16042), (107, 16045), (111, 16093), (120, 16192), (123, 16219), (131, 16288), (136, 16342), (146, 16399), (157, 16474), (159, 16501), (162, 16531), (166, 16555), (172, 16609), (179, 16687), (187, 16741), (194, 16780), (198, 16798), (205, 16831), (206, 16840), (212, 16873), (214, 16882), (220, 16933), (243, 17017), (244, 17023),

Gene: BarryBee\_22 Start: 15830, Stop: 17041, Start Num: 62

Candidate Starts for BarryBee\_22:

(Start: 62 @15830 has 107 MA's), (105, 16040), (106, 16052), (107, 16055), (111, 16103), (120, 16202), (123, 16229), (131, 16298), (136, 16352), (146, 16409), (157, 16484), (159, 16511), (162, 16541), (166, 16565), (172, 16619), (179, 16697), (187, 16751), (194, 16790), (198, 16808), (205, 16841), (206, 16850), (212, 16883), (214, 16892), (220, 16943), (243, 17027), (244, 17033),

Gene: BartholomewSD\_22 Start: 15862, Stop: 17073, Start Num: 62

Candidate Starts for BartholomewSD\_22:

(Start: 62 @15862 has 107 MA's), (105, 16072), (106, 16084), (107, 16087), (113, 16147), (123, 16261), (125, 16276), (136, 16384), (146, 16441), (148, 16453), (156, 16513), (167, 16600), (169, 16621), (181, 16738), (187, 16783), (189, 16798), (203, 16864), (206, 16882), (214, 16924), (217, 16951), (220, 16975), (243, 17059), (244, 17065),

Gene: BeardedLady\_21 Start: 16101, Stop: 17315, Start Num: 62

Candidate Starts for BeardedLady\_21:

(Start: 62 @16101 has 107 MA's), (66, 16128), (105, 16311), (111, 16374), (120, 16473), (123, 16500), (131, 16569), (135, 16599), (153, 16719), (164, 16818), (186, 17016), (187, 17022), (194, 17061), (200, 17085), (205, 17112), (206, 17121), (212, 17154), (220, 17214), (223, 17244), (241, 17292), (243, 17301), (244, 17307),

Gene: Bernstein\_17 Start: 12526, Stop: 14229, Start Num: 61

Candidate Starts for Bernstein\_17:

(Start: 61 @12526 has 11 MA's), (70, 12574), (78, 12619), (102, 12742), (106, 12772), (123, 12946), (124, 12958), (164, 13264), (165, 13267), (178, 13393), (182, 13444), (189, 13483), (192, 13495), (198, 13525), (200, 13531), (206, 13567), (263, 13933), (273, 14023), (306, 14203), (307, 14206),

Gene: Bovely\_20 Start: 15860, Stop: 17074, Start Num: 62

Candidate Starts for Bovely\_20:

(Start: 62 @15860 has 107 MA's), (66, 15887), (105, 16070), (111, 16133), (120, 16232), (123, 16259), (131, 16328), (135, 16358), (153, 16478), (164, 16577), (186, 16775), (187, 16781), (194, 16820), (200, 16844), (205, 16871), (206, 16880), (212, 16913), (220, 16973), (223, 17003), (241, 17051), (243, 17060), (244, 17066),

Gene: Bowden\_21 Start: 15794, Stop: 17005, Start Num: 62

Candidate Starts for Bowden\_21:

(Start: 62 @15794 has 107 MA's), (105, 16004), (106, 16016), (107, 16019), (113, 16079), (123, 16193), (125, 16208), (130, 16259), (136, 16316), (146, 16373), (156, 16445), (164, 16511), (167, 16532), (169, 16553), (181, 16670), (187, 16715), (189, 16730), (203, 16796), (206, 16814), (214, 16856), (217, 16883), (220, 16907), (243, 16991), (244, 16997),

Gene: Brahms\_17 Start: 12466, Stop: 14169, Start Num: 61

Candidate Starts for Brahms\_17:

(Start: 61 @12466 has 11 MA's), (78, 12559), (102, 12682), (106, 12712), (123, 12886), (164, 13204), (165, 13207), (178, 13333), (182, 13384), (189, 13423), (192, 13435), (198, 13465), (200, 13471), (203, 13489), (206, 13507), (228, 13654), (235, 13669), (237, 13678), (247, 13717), (263, 13873), (273, 13963), (306, 14143), (307, 14146),

Gene: Brataylor\_21 Start: 15847, Stop: 17058, Start Num: 62

Candidate Starts for Brataylor\_21:

(Start: 62 @15847 has 107 MA's), (66, 15874), (94, 16027), (105, 16057), (111, 16120), (120, 16219), (123, 16246), (131, 16315), (136, 16369), (138, 16381), (146, 16426), (156, 16498), (157, 16501), (164, 16564), (167, 16585), (175, 16660), (186, 16762), (187, 16768), (193, 16804), (194, 16807), (198, 16825), (206, 16867), (242, 17041), (243, 17044), (244, 17050),

Gene: BroPlease\_21 Start: 16546, Stop: 17751, Start Num: 62

Candidate Starts for BroPlease\_21:

(58, 16528), (Start: 60 @16540 has 1 MA's), (Start: 62 @16546 has 107 MA's), (77, 16633), (96, 16732), (106, 16768), (113, 16831), (123, 16945), (124, 16957), (130, 17011), (131, 17014), (135, 17044), (136, 17068), (146, 17125), (153, 17164), (156, 17197), (157, 17200), (161, 17248), (187, 17467), (189, 17482), (199, 17527), (205, 17557), (208, 17572), (214, 17608), (241, 17728), (243, 17737), (244, 17743),

Gene: BryanRecycles\_21 Start: 16017, Stop: 17219, Start Num: 62

Candidate Starts for BryanRecycles\_21:

(Start: 62 @16017 has 107 MA's), (66, 16044), (105, 16227), (111, 16290), (120, 16389), (123, 16416), (131, 16485), (135, 16515), (186, 16932), (187, 16938), (194, 16977), (199, 16998), (205, 17028), (206, 17037), (212, 17070), (222, 17151), (238, 17193), (241, 17196), (243, 17205), (244, 17211),

Gene: Caelum\_21 Start: 16340, Stop: 17551, Start Num: 62

Candidate Starts for Caelum\_21:

(Start: 62 @16340 has 107 MA's), (66, 16367), (104, 16547), (106, 16562), (107, 16565), (113, 16625), (120, 16712), (123, 16739), (131, 16808), (136, 16862), (146, 16919), (164, 17057), (187, 17261), (197, 17315), (220, 17453), (241, 17528), (243, 17537), (244, 17543),

Gene: Caliburn\_20 Start: 15834, Stop: 17048, Start Num: 62

Candidate Starts for Caliburn\_20:

(Start: 62 @15834 has 107 MA's), (66, 15861), (105, 16044), (111, 16107), (120, 16206), (123, 16233), (131, 16302), (135, 16332), (153, 16452), (164, 16551), (186, 16749), (187, 16755), (194, 16794), (200, 16818), (205, 16845), (206, 16854), (212, 16887), (220, 16947), (223, 16977), (241, 17025), (243, 17034), (244, 17040),

Gene: Celery\_23 Start: 16489, Stop: 17706, Start Num: 62

Candidate Starts for Celery\_23:

(Start: 62 @16489 has 107 MA's), (66, 16516), (74, 16567), (105, 16699), (110, 16759), (116, 16801), (131, 16957), (135, 16987), (143, 17044), (145, 17065), (146, 17068), (157, 17143), (159, 17170), (164, 17206), (187, 17410), (189, 17425), (195, 17458), (199, 17470), (206, 17509), (220, 17602), (223, 17632), (243, 17692), (244, 17698),

Gene: Celeste\_20 Start: 15839, Stop: 17050, Start Num: 62

Candidate Starts for Celeste\_20:

(Start: 62 @15839 has 107 MA's), (66, 15866), (91, 15992), (94, 16019), (105, 16049), (111, 16112), (120, 16211), (123, 16238), (131, 16307), (136, 16361), (138, 16373), (146, 16418), (156, 16490), (157, 16493), (164, 16556), (167, 16577), (175, 16652), (186, 16754), (187, 16760), (193, 16796), (194, 16799), (198, 16817), (206, 16859), (242, 17033), (243, 17036), (244, 17042),

Gene: Celia\_20 Start: 16277, Stop: 17497, Start Num: 62

Candidate Starts for Celia\_20:

(Start: 62 @16277 has 107 MA's), (69, 16319), (77, 16364), (92, 16433), (102, 16481), (105, 16487), (122, 16673), (123, 16676), (126, 16700), (131, 16745), (136, 16799), (159, 16958), (164, 16994), (183, 17177), (189, 17213), (194, 17237), (198, 17255), (200, 17261), (206, 17297), (214, 17339), (236, 17465), (243, 17483), (244, 17489),

Gene: Chivey\_30 Start: 17840, Stop: 19609, Start Num: 59

Candidate Starts for Chivey\_30:

(Start: 59 @17840 has 29 MA's), (77, 17942), (89, 18005), (109, 18128), (110, 18131), (112, 18137), (123, 18266), (124, 18278), (132, 18356), (144, 18446), (152, 18491), (162, 18593), (169, 18641), (184, 18788), (189, 18818), (191, 18827), (196, 18854), (199, 18863), (213, 18944), (220, 18998), (227, 19049), (234, 19064), (245, 19100), (257, 19238), (278, 19394), (283, 19412), (308, 19589),

Gene: Chucky\_20 Start: 15831, Stop: 17042, Start Num: 62

Candidate Starts for Chucky\_20:

(Start: 62 @15831 has 107 MA's), (105, 16041), (106, 16053), (107, 16056), (111, 16104), (120, 16203), (123, 16230), (131, 16299), (136, 16353), (146, 16410), (157, 16485), (159, 16512), (162, 16542), (166, 16566), (172, 16620), (179, 16698), (187, 16752), (194, 16791), (198, 16809), (205, 16842), (206, 16851), (212, 16884), (214, 16893), (220, 16944), (243, 17028), (244, 17034),

Gene: Clayda5\_17 Start: 12466, Stop: 14199, Start Num: 61

Candidate Starts for Clayda5\_17:

(Start: 61 @12466 has 11 MA's), (70, 12514), (78, 12559), (92, 12625), (102, 12682), (106, 12712), (123, 12886), (124, 12898), (164, 13204), (165, 13207), (178, 13333), (182, 13384), (189, 13423), (192, 13435), (198, 13465), (200, 13471), (206, 13507), (263, 13873), (306, 14173), (307, 14176),

Gene: Coltrane\_17 Start: 12466, Stop: 14169, Start Num: 61

Candidate Starts for Coltrane\_17:

(Start: 61 @12466 has 11 MA's), (78, 12559), (102, 12682), (106, 12712), (123, 12886), (164, 13204), (165, 13207), (178, 13333), (182, 13384), (189, 13423), (192, 13435), (198, 13465), (200, 13471), (203, 13489), (206, 13507), (228, 13654), (235, 13669), (237, 13678), (247, 13717), (263, 13873), (273, 13963), (306, 14143), (307, 14146),

Gene: Conan\_21 Start: 16260, Stop: 17477, Start Num: 62

Candidate Starts for Conan\_21:

(Start: 62 @16260 has 107 MA's), (66, 16287), (74, 16338), (105, 16470), (116, 16572), (131, 16728), (135, 16758), (136, 16782), (143, 16815), (146, 16839), (157, 16914), (164, 16977), (187, 17181), (189, 17196), (199, 17241), (203, 17262), (206, 17280), (220, 17373), (223, 17403), (243, 17463), (244, 17469),

Gene: CoolCookie\_31 Start: 18685, Stop: 20463, Start Num: 59

Candidate Starts for CoolCookie\_31:

(32, 18520), (51, 18646), (Start: 59 @18685 has 29 MA's), (77, 18787), (80, 18808), (89, 18850), (96, 18886), (109, 18973), (123, 19111), (132, 19201), (145, 19303), (162, 19438), (169, 19486), (176, 19567), (184, 19633), (189, 19663), (191, 19672), (199, 19708), (220, 19843), (227, 19894), (234, 19909), (245, 19945), (251, 19993), (266, 20128), (308, 20443),

Gene: Crestdrop\_30 Start: 17749, Stop: 19518, Start Num: 59

Candidate Starts for Crestdrop\_30:

(46, 17680), (Start: 59 @17749 has 29 MA's), (77, 17851), (89, 17914), (109, 18037), (110, 18040), (112, 18046), (123, 18175), (124, 18187), (152, 18400), (162, 18502), (169, 18550), (176, 18631),

(184, 18697), (189, 18727), (191, 18736), (196, 18763), (199, 18772), (213, 18853), (220, 18907), (227, 18958), (234, 18973), (245, 19009), (251, 19057), (283, 19321), (305, 19486), (308, 19498),

Gene: Cybele\_31 Start: 18655, Stop: 20433, Start Num: 59

Candidate Starts for Cybele\_31:

(32, 18490), (51, 18616), (Start: 59 @18655 has 29 MA's), (77, 18757), (80, 18778), (89, 18820), (96, 18856), (109, 18943), (123, 19081), (132, 19171), (145, 19273), (161, 19399), (162, 19408), (169, 19456), (176, 19537), (184, 19603), (189, 19633), (191, 19642), (196, 19669), (199, 19678), (220, 19813), (227, 19864), (234, 19879), (245, 19915), (251, 19963), (259, 20059), (266, 20098), (308, 20413),

Gene: DannyDe\_30 Start: 17832, Stop: 19601, Start Num: 59

Candidate Starts for DannyDe\_30:

(46, 17763), (Start: 59 @17832 has 29 MA's), (77, 17934), (89, 17997), (109, 18120), (110, 18123), (112, 18129), (123, 18258), (124, 18270), (152, 18483), (162, 18585), (169, 18633), (176, 18714), (181, 18750), (184, 18780), (189, 18810), (191, 18819), (196, 18846), (199, 18855), (213, 18936), (220, 18990), (227, 19041), (234, 19056), (245, 19092), (251, 19140), (266, 19275), (283, 19404), (305, 19569), (308, 19581),

Gene: Danzina\_21 Start: 16049, Stop: 17260, Start Num: 62

Candidate Starts for Danzina\_21:

(Start: 62 @16049 has 107 MA's), (66, 16076), (91, 16202), (93, 16208), (94, 16229), (105, 16259), (111, 16322), (120, 16421), (123, 16448), (131, 16517), (136, 16571), (137, 16574), (138, 16583), (146, 16628), (156, 16700), (157, 16703), (164, 16766), (167, 16787), (175, 16862), (186, 16964), (187, 16970), (193, 17006), (194, 17009), (198, 17027), (206, 17069), (242, 17243), (243, 17246), (244, 17252),

Gene: Dattran\_21 Start: 15838, Stop: 17049, Start Num: 62

Candidate Starts for Dattran\_21:

(Start: 62 @15838 has 107 MA's), (66, 15865), (91, 15991), (94, 16018), (105, 16048), (111, 16111), (120, 16210), (123, 16237), (131, 16306), (136, 16360), (138, 16372), (146, 16417), (156, 16489), (157, 16492), (164, 16555), (167, 16576), (175, 16651), (186, 16753), (187, 16759), (193, 16795), (194, 16798), (198, 16816), (206, 16858), (242, 17032), (243, 17035), (244, 17041),

Gene: Daudau\_20 Start: 15774, Stop: 16985, Start Num: 62

Candidate Starts for Daudau\_20:

(Start: 62 @15774 has 107 MA's), (75, 15855), (80, 15882), (96, 15960), (105, 15984), (106, 15996), (113, 16059), (121, 16158), (123, 16173), (125, 16188), (136, 16296), (146, 16353), (156, 16425), (164, 16491), (181, 16650), (187, 16695), (189, 16710), (206, 16794), (208, 16800), (214, 16836), (217, 16863), (220, 16887), (243, 16971), (244, 16977),

Gene: Dauntless\_30 Start: 18392, Stop: 20161, Start Num: 59

Candidate Starts for Dauntless\_30:

(Start: 59 @18392 has 29 MA's), (77, 18494), (89, 18557), (109, 18680), (110, 18683), (112, 18689), (123, 18818), (124, 18830), (152, 19043), (162, 19145), (169, 19193), (176, 19274), (184, 19340), (189, 19370), (191, 19379), (196, 19406), (199, 19415), (213, 19496), (220, 19550), (227, 19601), (234, 19616), (245, 19652), (283, 19964), (303, 20090), (305, 20129), (308, 20141),

Gene: DelaGarza\_22 Start: 15128, Stop: 16816, Start Num: 62

Candidate Starts for DelaGarza\_22:

(Start: 62 @15128 has 107 MA's), (86, 15275), (87, 15278), (115, 15440), (124, 15557), (126, 15569), (130, 15623), (141, 15710), (145, 15740), (147, 15749), (156, 15815), (164, 15881), (174, 15965), (185, 16073), (189, 16097), (196, 16133), (200, 16145), (206, 16181), (209, 16193), (210, 16208),

(211, 16211), (215, 16235), (220, 16274), (222, 16295), (230, 16331), (239, 16352), (248, 16409), (265, 16556), (270, 16607), (276, 16652), (286, 16697), (290, 16721), (293, 16739),

Gene: Dexers\_19 Start: 16241, Stop: 17458, Start Num: 62

Candidate Starts for Dexers\_19:

(Start: 62 @16241 has 107 MA's), (66, 16268), (74, 16319), (105, 16451), (107, 16466), (116, 16553), (120, 16613), (131, 16709), (135, 16739), (146, 16820), (157, 16895), (159, 16922), (164, 16958), (184, 17147), (187, 17162), (189, 17177), (199, 17222), (203, 17243), (206, 17261), (220, 17354), (223, 17384), (243, 17444), (244, 17450),

Gene: Diane\_20 Start: 16306, Stop: 17520, Start Num: 62

Candidate Starts for Diane\_20:

(Start: 62 @16306 has 107 MA's), (66, 16333), (80, 16414), (82, 16432), (96, 16492), (102, 16510), (106, 16528), (107, 16531), (113, 16591), (123, 16705), (136, 16828), (146, 16885), (181, 17182), (186, 17221), (187, 17227), (200, 17290), (220, 17419), (241, 17497), (243, 17506), (244, 17512),

Gene: Dwayne\_20 Start: 15827, Stop: 17038, Start Num: 62

Candidate Starts for Dwayne\_20:

(Start: 62 @15827 has 107 MA's), (105, 16037), (106, 16049), (107, 16052), (111, 16100), (120, 16199), (123, 16226), (131, 16295), (136, 16349), (146, 16406), (157, 16481), (159, 16508), (162, 16538), (166, 16562), (172, 16616), (179, 16694), (187, 16748), (194, 16787), (198, 16805), (205, 16838), (206, 16847), (212, 16880), (214, 16889), (220, 16940), (243, 17024), (244, 17030),

Gene: ELB20\_19 Start: 15893, Stop: 17104, Start Num: 62

Candidate Starts for ELB20\_19:

(Start: 62 @15893 has 107 MA's), (80, 16001), (105, 16103), (106, 16115), (107, 16118), (113, 16178), (123, 16292), (125, 16307), (136, 16415), (143, 16448), (146, 16472), (156, 16544), (159, 16574), (166, 16628), (167, 16631), (169, 16652), (181, 16769), (187, 16814), (189, 16829), (206, 16913), (207, 16916), (208, 16919), (214, 16955), (219, 16994), (220, 17006), (224, 17045), (241, 17081), (243, 17090), (244, 17096),

Gene: Eddasa\_21 Start: 16017, Stop: 17219, Start Num: 62

Candidate Starts for Eddasa\_21:

(Start: 62 @16017 has 107 MA's), (66, 16044), (105, 16227), (111, 16290), (120, 16389), (123, 16416), (131, 16485), (135, 16515), (186, 16932), (187, 16938), (194, 16977), (199, 16998), (205, 17028), (206, 17037), (212, 17070), (222, 17151), (238, 17193), (241, 17196), (243, 17205), (244, 17211),

Gene: Eden\_17 Start: 12590, Stop: 14578, Start Num: 61

Candidate Starts for Eden\_17:

(Start: 61 @12590 has 11 MA's), (81, 12713), (99, 12791), (106, 12833), (114, 12908), (123, 13007), (164, 13325), (165, 13328), (182, 13505), (189, 13544), (198, 13586), (206, 13628), (210, 13655), (219, 13709), (221, 13730), (235, 13790), (237, 13799), (251, 13877), (253, 13892), (261, 13976), (262, 13979), (263, 14000), (267, 14015), (291, 14192), (292, 14198), (296, 14240), (299, 14249), (300, 14252), (310, 14360), (314, 14417), (316, 14552),

Gene: Ejemplo\_20 Start: 15827, Stop: 17038, Start Num: 62

Candidate Starts for Ejemplo\_20:

(Start: 62 @15827 has 107 MA's), (66, 15854), (105, 16037), (106, 16049), (107, 16052), (120, 16199), (123, 16226), (136, 16349), (146, 16406), (157, 16481), (159, 16508), (162, 16538), (167, 16565), (172, 16616), (187, 16748), (194, 16787), (198, 16805), (204, 16835), (205, 16838), (206, 16847), (212, 16880), (214, 16889), (220, 16940), (233, 17000), (243, 17024), (244, 17030),

Gene: ElGato\_21 Start: 16263, Stop: 17480, Start Num: 62

Candidate Starts for ElGato\_21:

(Start: 62 @16263 has 107 MA's), (66, 16290), (74, 16341), (105, 16473), (116, 16575), (131, 16731), (135, 16761), (136, 16785), (143, 16818), (146, 16842), (157, 16917), (164, 16980), (184, 17169), (187, 17184), (189, 17199), (199, 17244), (203, 17265), (206, 17283), (220, 17376), (223, 17406), (243, 17466), (244, 17472),

Gene: Emaanora\_22 Start: 15830, Stop: 17041, Start Num: 62

Candidate Starts for Emaanora\_22:

(Start: 62 @15830 has 107 MA's), (105, 16040), (106, 16052), (107, 16055), (111, 16103), (120, 16202), (123, 16229), (131, 16298), (136, 16352), (146, 16409), (157, 16484), (159, 16511), (162, 16541), (166, 16565), (172, 16619), (179, 16697), (187, 16751), (194, 16790), (198, 16808), (205, 16841), (206, 16850), (212, 16883), (214, 16892), (220, 16943), (243, 17027), (244, 17033),

Gene: EnochSoames\_22 Start: 16013, Stop: 17215, Start Num: 62

Candidate Starts for EnochSoames\_22:

(Start: 62 @16013 has 107 MA's), (66, 16040), (105, 16223), (111, 16286), (120, 16385), (123, 16412), (131, 16481), (135, 16511), (153, 16631), (186, 16928), (187, 16934), (194, 16973), (199, 16994), (205, 17024), (206, 17033), (212, 17066), (222, 17147), (238, 17189), (241, 17192), (243, 17201), (244, 17207),

Gene: Erudite\_30 Start: 18392, Stop: 20161, Start Num: 59

Candidate Starts for Erudite\_30:

(Start: 59 @18392 has 29 MA's), (77, 18494), (89, 18557), (109, 18680), (110, 18683), (112, 18689), (123, 18818), (124, 18830), (152, 19043), (162, 19145), (169, 19193), (176, 19274), (184, 19340), (189, 19370), (191, 19379), (196, 19406), (199, 19415), (213, 19496), (220, 19550), (227, 19601), (234, 19616), (245, 19652), (283, 19964), (303, 20090), (305, 20129), (308, 20141),

Gene: Esperer\_20 Start: 15854, Stop: 17068, Start Num: 62

Candidate Starts for Esperer\_20:

(Start: 62 @15854 has 107 MA's), (66, 15881), (105, 16064), (111, 16127), (120, 16226), (123, 16253), (131, 16322), (135, 16352), (153, 16472), (164, 16571), (186, 16769), (187, 16775), (194, 16814), (200, 16838), (205, 16865), (206, 16874), (212, 16907), (220, 16967), (223, 16997), (241, 17045), (243, 17054), (244, 17060),

Gene: FlameThrower\_17 Start: 13345, Stop: 15654, Start Num: 3

Candidate Starts for FlameThrower\_17:

(Start: 3 @13345 has 2 MA's), (4, 13411), (6, 13474), (18, 13600), (19, 13612), (23, 13642), (28, 13687), (33, 13762), (36, 13780), (38, 13786), (42, 13825), (49, 13870), (65, 13957), (72, 13996), (77, 14026), (106, 14194), (123, 14368), (124, 14380), (150, 14566), (154, 14608), (163, 14683), (165, 14689), (169, 14728), (178, 14815), (189, 14905), (200, 14953), (205, 14980), (210, 15016), (219, 15070), (235, 15151), (241, 15166), (250, 15235), (264, 15358), (268, 15394), (269, 15403), (277, 15463), (287, 15490),

Gene: Franklin22\_18 Start: 12769, Stop: 14757, Start Num: 61

Candidate Starts for Franklin22\_18:

(Start: 61 @12769 has 11 MA's), (81, 12892), (91, 12922), (96, 12955), (106, 13015), (114, 13090), (122, 13186), (123, 13189), (128, 13234), (152, 13399), (162, 13501), (165, 13510), (169, 13549), (175, 13603), (182, 13687), (189, 13726), (198, 13768), (219, 13891), (246, 14014), (247, 14020), (251, 14059), (253, 14074), (261, 14158), (262, 14161), (263, 14182), (273, 14269), (296, 14419), (299, 14428), (301, 14437), (310, 14539), (312, 14581), (316, 14731),

Gene: FreddieHg\_30 Start: 17856, Stop: 19625, Start Num: 59

Candidate Starts for FreddieHg\_30:

(Start: 59 @17856 has 29 MA's), (77, 17958), (89, 18021), (109, 18144), (110, 18147), (112, 18153), (123, 18282), (124, 18294), (132, 18372), (144, 18462), (152, 18507), (162, 18609), (169, 18657), (184, 18804), (189, 18834), (191, 18843), (196, 18870), (199, 18879), (213, 18960), (220, 19014), (227, 19065), (234, 19080), (245, 19116), (257, 19254), (278, 19410), (283, 19428), (308, 19605),

Gene: Gack\_17 Start: 12658, Stop: 14643, Start Num: 61

Candidate Starts for Gack\_17:

(40, 12544), (Start: 61 @12658 has 11 MA's), (99, 12859), (106, 12901), (108, 12913), (114, 12976), (123, 13075), (124, 13087), (147, 13261), (151, 13276), (164, 13393), (165, 13396), (169, 13435), (173, 13468), (182, 13573), (186, 13591), (189, 13612), (198, 13654), (219, 13777), (241, 13873), (247, 13906), (251, 13945), (253, 13960), (262, 14047), (263, 14068), (267, 14083), (271, 14146), (272, 14152), (273, 14155), (282, 14209), (296, 14305), (310, 14425), (314, 14482), (316, 14617),

Gene: Gilda\_31 Start: 18679, Stop: 20457, Start Num: 59

Candidate Starts for Gilda\_31:

(32, 18514), (51, 18640), (Start: 59 @18679 has 29 MA's), (77, 18781), (80, 18802), (89, 18844), (96, 18880), (109, 18967), (123, 19105), (132, 19195), (145, 19297), (162, 19432), (169, 19480), (176, 19561), (184, 19627), (189, 19657), (191, 19666), (196, 19693), (199, 19702), (220, 19837), (227, 19888), (234, 19903), (245, 19939), (251, 19987), (259, 20083), (266, 20122), (308, 20437),

Gene: Gingerbug\_20 Start: 14337, Stop: 16679, Start Num: 5

Candidate Starts for Gingerbug\_20:

(Start: 5 @14337 has 1 MA's), (11, 14445), (14, 14460), (15, 14484), (16, 14487), (21, 14523), (26, 14574), (29, 14595), (31, 14652), (34, 14664), (37, 14679), (41, 14715), (68, 14871), (71, 14883), (79, 14934), (90, 15018), (96, 15051), (97, 15054), (100, 15078), (129, 15345), (140, 15453), (145, 15486), (146, 15489), (147, 15495), (149, 15504), (152, 15519), (156, 15561), (158, 15579), (164, 15627), (185, 15819), (189, 15843), (190, 15849), (192, 15855), (195, 15876), (196, 15879), (201, 15900), (210, 15954), (211, 15957), (215, 15981), (220, 16020), (222, 16041), (229, 16074), (252, 16188), (283, 16452), (285, 16464), (292, 16503), (302, 16563), (304, 16587),

Gene: GirlDinner\_20 Start: 15565, Stop: 16776, Start Num: 62

Candidate Starts for GirlDinner\_20:

(Start: 62 @15565 has 107 MA's), (105, 15775), (106, 15787), (107, 15790), (113, 15850), (123, 15964), (125, 15979), (130, 16030), (156, 16216), (164, 16282), (166, 16300), (167, 16303), (181, 16441), (187, 16486), (189, 16501), (199, 16546), (200, 16549), (202, 16564), (205, 16576), (206, 16585), (220, 16678), (243, 16762), (244, 16768),

Gene: Goby\_20 Start: 15844, Stop: 17055, Start Num: 62

Candidate Starts for Goby\_20:

(Start: 62 @15844 has 107 MA's), (66, 15871), (91, 15997), (94, 16024), (105, 16054), (111, 16117), (120, 16216), (123, 16243), (131, 16312), (136, 16366), (138, 16378), (146, 16423), (156, 16495), (157, 16498), (164, 16561), (167, 16582), (175, 16657), (186, 16759), (187, 16765), (193, 16801), (194, 16804), (198, 16822), (206, 16864), (242, 17038), (243, 17041), (244, 17047),

Gene: Godpower\_21 Start: 15855, Stop: 17066, Start Num: 62

Candidate Starts for Godpower\_21:

(Start: 62 @15855 has 107 MA's), (66, 15882), (105, 16065), (106, 16077), (107, 16080), (111, 16128), (120, 16227), (123, 16254), (131, 16323), (136, 16377), (146, 16434), (157, 16509), (162, 16566), (167, 16593), (187, 16776), (194, 16815), (204, 16863), (205, 16866), (206, 16875), (212, 16908), (243, 17052), (244, 17058),

Gene: GreenWeasel\_22 Start: 16555, Stop: 17760, Start Num: 62



Candidate Starts for GreenWeasel\_22:

(58, 16537), (Start: 60 @16549 has 1 MA's), (Start: 62 @16555 has 107 MA's), (77, 16642), (96, 16741), (106, 16777), (113, 16840), (123, 16954), (124, 16966), (130, 17020), (131, 17023), (135, 17053), (136, 17077), (146, 17134), (153, 17173), (156, 17206), (157, 17209), (161, 17257), (187, 17476), (189, 17491), (199, 17536), (205, 17566), (208, 17581), (214, 17617), (241, 17737), (243, 17746), (244, 17752),

Gene: Hager\_32 Start: 18239, Stop: 20017, Start Num: 59

Candidate Starts for Hager\_32:

(53, 18209), (55, 18212), (56, 18224), (57, 18236), (Start: 59 @18239 has 29 MA's), (77, 18341), (89, 18404), (109, 18527), (122, 18662), (123, 18665), (124, 18677), (132, 18755), (145, 18857), (162, 18992), (169, 19040), (170, 19049), (184, 19187), (189, 19217), (191, 19226), (196, 19253), (199, 19262), (220, 19397), (227, 19448), (234, 19463), (251, 19547), (266, 19682), (308, 19997),

Gene: Haizum\_20 Start: 16338, Stop: 17552, Start Num: 62

Candidate Starts for Haizum\_20:

(Start: 62 @16338 has 107 MA's), (66, 16365), (80, 16446), (96, 16524), (102, 16542), (106, 16560), (107, 16563), (113, 16623), (123, 16737), (136, 16860), (146, 16917), (181, 17214), (187, 17259), (200, 17322), (220, 17451), (241, 17529), (243, 17538), (244, 17544),

Gene: Hank144\_21 Start: 15960, Stop: 17171, Start Num: 62

Candidate Starts for Hank144\_21:

(Start: 62 @15960 has 107 MA's), (80, 16068), (81, 16083), (105, 16170), (106, 16182), (107, 16185), (113, 16245), (123, 16359), (125, 16374), (136, 16482), (156, 16611), (164, 16677), (167, 16698), (169, 16719), (181, 16836), (186, 16875), (187, 16881), (189, 16896), (205, 16971), (206, 16980), (220, 17073), (243, 17157), (244, 17163),

Gene: Haunter\_31 Start: 18092, Stop: 19870, Start Num: 59

Candidate Starts for Haunter\_31:

(51, 18053), (Start: 59 @18092 has 29 MA's), (77, 18194), (80, 18215), (89, 18257), (96, 18293), (109, 18380), (123, 18518), (132, 18608), (145, 18710), (162, 18845), (169, 18893), (176, 18974), (184, 19040), (189, 19070), (191, 19079), (196, 19106), (199, 19115), (220, 19250), (227, 19301), (234, 19316), (245, 19352), (259, 19496), (266, 19535), (289, 19706), (308, 19850),

Gene: Hiddenleaf\_30 Start: 17840, Stop: 19609, Start Num: 59

Candidate Starts for Hiddenleaf\_30:

(Start: 59 @17840 has 29 MA's), (77, 17942), (89, 18005), (109, 18128), (110, 18131), (112, 18137), (123, 18266), (124, 18278), (132, 18356), (144, 18446), (152, 18491), (162, 18593), (169, 18641), (184, 18788), (189, 18818), (191, 18827), (196, 18854), (199, 18863), (213, 18944), (220, 18998), (227, 19049), (234, 19064), (245, 19100), (257, 19238), (278, 19394), (283, 19412), (308, 19589),

Gene: Hippo\_20 Start: 15830, Stop: 17041, Start Num: 62

Candidate Starts for Hippo\_20:

(Start: 62 @15830 has 107 MA's), (105, 16040), (106, 16052), (107, 16055), (111, 16103), (120, 16202), (123, 16229), (131, 16298), (136, 16352), (146, 16409), (157, 16484), (159, 16511), (162, 16541), (166, 16565), (172, 16619), (179, 16697), (187, 16751), (194, 16790), (198, 16808), (205, 16841), (206, 16850), (212, 16883), (214, 16892), (220, 16943), (223, 16973), (243, 17027), (244, 17033),

Gene: Honk\_16 Start: 12148, Stop: 14262, Start Num: 63

Candidate Starts for Honk\_16:

(Start: 63 @12148 has 1 MA's), (84, 12286), (88, 12322), (123, 12580), (131, 12649), (142, 12733), (146, 12760), (155, 12826), (164, 12898), (180, 13054), (185, 13093), (188, 13108), (196, 13153),

(218, 13279), (222, 13315), (246, 13405), (254, 13483), (269, 13627), (270, 13633), (275, 13684), (280, 13711), (290, 13762), (294, 13789), (309, 13927), (311, 13948), (313, 13987), (315, 14038), (317, 14188),

Gene: Hydra\_22 Start: 16382, Stop: 17596, Start Num: 62

Candidate Starts for Hydra\_22:

(Start: 62 @16382 has 107 MA's), (66, 16409), (105, 16592), (111, 16655), (120, 16754), (123, 16781), (131, 16850), (135, 16880), (153, 17000), (164, 17099), (186, 17297), (187, 17303), (194, 17342), (200, 17366), (205, 17393), (206, 17402), (212, 17435), (220, 17495), (223, 17525), (241, 17573), (243, 17582), (244, 17588),

Gene: Indigo\_20 Start: 15854, Stop: 17068, Start Num: 62

Candidate Starts for Indigo\_20:

(Start: 62 @15854 has 107 MA's), (66, 15881), (105, 16064), (111, 16127), (120, 16226), (123, 16253), (131, 16322), (135, 16352), (153, 16472), (164, 16571), (186, 16769), (187, 16775), (194, 16814), (200, 16838), (205, 16865), (206, 16874), (212, 16907), (220, 16967), (223, 16997), (241, 17045), (243, 17054), (244, 17060),

Gene: Issmi\_21 Start: 16769, Stop: 17983, Start Num: 62

Candidate Starts for Issmi\_21:

(Start: 62 @16769 has 107 MA's), (66, 16796), (81, 16892), (102, 16973), (105, 16979), (106, 16991), (107, 16994), (113, 17054), (114, 17066), (123, 17168), (124, 17180), (131, 17237), (136, 17291), (146, 17348), (164, 17486), (187, 17690), (200, 17753), (205, 17780), (207, 17792), (220, 17882), (241, 17960), (243, 17969), (244, 17975),

Gene: Itza\_20 Start: 16200, Stop: 17420, Start Num: 62

Candidate Starts for Itza\_20:

(Start: 62 @16200 has 107 MA's), (69, 16242), (77, 16287), (92, 16356), (102, 16404), (105, 16410), (122, 16596), (123, 16599), (126, 16623), (131, 16668), (136, 16722), (159, 16881), (164, 16917), (183, 17100), (189, 17136), (194, 17160), (198, 17178), (200, 17184), (206, 17220), (214, 17262), (236, 17388), (243, 17406), (244, 17412),

Gene: Izzy\_21 Start: 16064, Stop: 17266, Start Num: 62

Candidate Starts for Izzy\_21:

(Start: 62 @16064 has 107 MA's), (66, 16091), (105, 16274), (111, 16337), (120, 16436), (123, 16463), (131, 16532), (135, 16562), (186, 16979), (187, 16985), (194, 17024), (199, 17045), (205, 17075), (206, 17084), (212, 17117), (222, 17198), (238, 17240), (241, 17243), (243, 17252), (244, 17258),

Gene: JDawG\_30 Start: 18422, Stop: 20188, Start Num: 59

Candidate Starts for JDawG\_30:

(Start: 59 @18422 has 29 MA's), (77, 18524), (89, 18587), (103, 18647), (109, 18710), (110, 18713), (112, 18719), (123, 18848), (124, 18860), (162, 19172), (169, 19220), (189, 19397), (191, 19406), (199, 19442), (213, 19523), (220, 19577), (227, 19628), (234, 19643), (245, 19679), (251, 19727), (266, 19862), (283, 19991), (303, 20117), (305, 20156), (308, 20168),

Gene: Janus\_21 Start: 15903, Stop: 17114, Start Num: 62

Candidate Starts for Janus\_21:

(Start: 62 @15903 has 107 MA's), (105, 16113), (106, 16125), (107, 16128), (113, 16188), (114, 16200), (123, 16302), (125, 16317), (130, 16368), (154, 16542), (156, 16554), (164, 16620), (166, 16638), (167, 16641), (181, 16779), (187, 16824), (189, 16839), (199, 16884), (200, 16887), (205, 16914), (206, 16923), (220, 17016), (243, 17100), (244, 17106),

Gene: Jash\_21 Start: 16017, Stop: 17219, Start Num: 62

Candidate Starts for Jash\_21:

(Start: 62 @16017 has 107 MA's), (66, 16044), (105, 16227), (111, 16290), (120, 16389), (123, 16416), (131, 16485), (135, 16515), (186, 16932), (187, 16938), (194, 16977), (199, 16998), (205, 17028), (206, 17037), (212, 17070), (222, 17151), (238, 17193), (241, 17196), (243, 17205), (244, 17211),

Gene: Jevington\_22 Start: 16207, Stop: 17418, Start Num: 62

Candidate Starts for Jevington\_22:

(Start: 62 @16207 has 107 MA's), (75, 16288), (105, 16417), (106, 16429), (113, 16492), (123, 16606), (125, 16621), (136, 16729), (143, 16762), (146, 16786), (156, 16858), (164, 16924), (166, 16942), (167, 16945), (169, 16966), (181, 17083), (187, 17128), (189, 17143), (206, 17227), (208, 17233), (219, 17308), (220, 17320), (241, 17395), (243, 17404), (244, 17410),

Gene: JingleBells\_30 Start: 17956, Stop: 19725, Start Num: 59

Candidate Starts for JingleBells\_30:

(46, 17887), (Start: 59 @17956 has 29 MA's), (77, 18058), (89, 18121), (109, 18244), (110, 18247), (112, 18253), (123, 18382), (124, 18394), (152, 18607), (162, 18709), (169, 18757), (176, 18838), (184, 18904), (189, 18934), (191, 18943), (196, 18970), (199, 18979), (213, 19060), (220, 19114), (227, 19165), (234, 19180), (245, 19216), (283, 19528), (303, 19654), (305, 19693), (308, 19705),

Gene: Kaine\_20 Start: 16241, Stop: 17458, Start Num: 62

Candidate Starts for Kaine\_20:

(Start: 62 @16241 has 107 MA's), (66, 16268), (74, 16319), (105, 16451), (107, 16466), (116, 16553), (120, 16613), (131, 16709), (135, 16739), (143, 16796), (146, 16820), (157, 16895), (159, 16922), (164, 16958), (184, 17147), (187, 17162), (189, 17177), (199, 17222), (203, 17243), (206, 17261), (220, 17354), (223, 17384), (243, 17444), (244, 17450),

Gene: Karate\_30 Start: 18091, Stop: 20484, Start Num: 2

Candidate Starts for Karate\_30:

(1, 18049), (Start: 2 @18091 has 2 MA's), (7, 18280), (9, 18301), (10, 18307), (12, 18340), (13, 18346), (27, 18466), (30, 18532), (35, 18556), (39, 18583), (45, 18625), (49, 18652), (52, 18670), (54, 18676), (77, 18808), (89, 18871), (109, 18994), (112, 19003), (120, 19105), (123, 19132), (145, 19321), (162, 19456), (169, 19504), (184, 19651), (189, 19681), (191, 19690), (196, 19717), (199, 19726), (209, 19780), (213, 19807), (220, 19861), (227, 19912), (234, 19927), (243, 19960), (245, 19975), (257, 20113), (266, 20158), (283, 20287), (308, 20464),

Gene: Katalie\_21 Start: 16096, Stop: 17307, Start Num: 62

Candidate Starts for Katalie\_21:

(Start: 62 @16096 has 107 MA's), (66, 16123), (94, 16276), (105, 16306), (111, 16369), (120, 16468), (123, 16495), (131, 16564), (146, 16675), (156, 16747), (157, 16750), (159, 16777), (164, 16813), (167, 16834), (187, 17017), (193, 17053), (194, 17056), (198, 17074), (206, 17116), (220, 17209), (243, 17293), (244, 17299),

Gene: Kate\_31 Start: 18687, Stop: 20465, Start Num: 59

Candidate Starts for Kate\_31:

(32, 18522), (51, 18648), (Start: 59 @18687 has 29 MA's), (77, 18789), (80, 18810), (89, 18852), (96, 18888), (109, 18975), (123, 19113), (132, 19203), (145, 19305), (161, 19431), (162, 19440), (169, 19488), (176, 19569), (184, 19635), (189, 19665), (191, 19674), (196, 19701), (199, 19710), (220, 19845), (227, 19896), (234, 19911), (245, 19947), (251, 19995), (266, 20130), (308, 20445),

Gene: Katzastrophic\_17 Start: 13520, Stop: 15796, Start Num: 3

Candidate Starts for Katzastrophic\_17:

(Start: 3 @13520 has 2 MA's), (4, 13586), (6, 13649), (17, 13772), (22, 13805), (24, 13847), (30, 13910), (42, 13976), (43, 13982), (64, 14102), (74, 14159), (85, 14219), (92, 14237), (95, 14264), (106, 14336), (111, 14387), (113, 14399), (123, 14510), (124, 14522), (150, 14708), (154, 14750), (163, 14825), (165, 14831), (169, 14870), (178, 14957), (189, 15047), (200, 15095), (205, 15122), (210, 15158), (219, 15212), (235, 15293), (241, 15308), (250, 15377), (264, 15500), (268, 15536), (269, 15545), (277, 15605), (287, 15632),

Gene: Krampus\_31 Start: 18685, Stop: 20463, Start Num: 59

Candidate Starts for Krampus\_31:

(32, 18520), (51, 18646), (Start: 59 @18685 has 29 MA's), (77, 18787), (80, 18808), (89, 18850), (96, 18886), (109, 18973), (123, 19111), (132, 19201), (145, 19303), (162, 19438), (169, 19486), (176, 19567), (184, 19633), (189, 19663), (191, 19672), (199, 19708), (220, 19843), (227, 19894), (234, 19909), (245, 19945), (251, 19993), (266, 20128), (308, 20443),

Gene: Lannister\_21 Start: 15861, Stop: 17075, Start Num: 62

Candidate Starts for Lannister\_21:

(Start: 62 @15861 has 107 MA's), (66, 15888), (105, 16071), (106, 16083), (111, 16134), (120, 16233), (123, 16260), (131, 16329), (136, 16383), (146, 16440), (157, 16515), (159, 16542), (162, 16572), (166, 16596), (187, 16782), (194, 16821), (198, 16839), (204, 16869), (205, 16872), (206, 16881), (212, 16914), (214, 16923), (242, 17058), (243, 17061), (244, 17067),

Gene: Legacy\_20 Start: 15825, Stop: 17039, Start Num: 62

Candidate Starts for Legacy\_20:

(Start: 62 @15825 has 107 MA's), (66, 15852), (105, 16035), (111, 16098), (120, 16197), (123, 16224), (131, 16293), (135, 16323), (153, 16443), (164, 16542), (186, 16740), (187, 16746), (194, 16785), (200, 16809), (205, 16836), (206, 16845), (212, 16878), (220, 16938), (223, 16968), (241, 17016), (243, 17025), (244, 17031),

Gene: Lesiram\_23 Start: 15098, Stop: 16786, Start Num: 62

Candidate Starts for Lesiram\_23:

(Start: 62 @15098 has 107 MA's), (86, 15245), (87, 15248), (124, 15527), (126, 15539), (130, 15593), (145, 15710), (146, 15713), (147, 15719), (156, 15785), (164, 15851), (174, 15935), (185, 16043), (189, 16067), (190, 16073), (196, 16103), (200, 16115), (206, 16151), (209, 16163), (210, 16178), (211, 16181), (215, 16205), (220, 16244), (222, 16265), (230, 16301), (247, 16364), (265, 16526), (284, 16661), (288, 16688), (293, 16712),

Gene: Leviticus\_20 Start: 15854, Stop: 17068, Start Num: 62

Candidate Starts for Leviticus\_20:

(Start: 62 @15854 has 107 MA's), (66, 15881), (105, 16064), (111, 16127), (120, 16226), (123, 16253), (131, 16322), (135, 16352), (153, 16472), (164, 16571), (186, 16769), (187, 16775), (194, 16814), (200, 16838), (205, 16865), (206, 16874), (212, 16907), (220, 16967), (223, 16997), (241, 17045), (243, 17054), (244, 17060),

Gene: Lika\_20 Start: 15859, Stop: 17070, Start Num: 62

Candidate Starts for Lika\_20:

(Start: 62 @15859 has 107 MA's), (66, 15886), (105, 16069), (106, 16081), (107, 16084), (111, 16132), (120, 16231), (123, 16258), (131, 16327), (136, 16381), (146, 16438), (157, 16513), (162, 16570), (167, 16597), (187, 16780), (194, 16819), (204, 16867), (205, 16870), (206, 16879), (212, 16912), (243, 17056), (244, 17062),

Gene: Loofah\_21 Start: 15822, Stop: 17033, Start Num: 62

Candidate Starts for Loofah\_21:

(Start: 62 @15822 has 107 MA's), (80, 15930), (105, 16032), (106, 16044), (107, 16047), (113, 16107), (123, 16221), (125, 16236), (136, 16344), (143, 16377), (146, 16401), (156, 16473), (159, 16503), (166, 16557), (167, 16560), (169, 16581), (181, 16698), (187, 16743), (189, 16758), (206, 16842), (207, 16845), (208, 16848), (214, 16884), (219, 16923), (220, 16935), (224, 16974), (238, 17007), (241, 17010), (243, 17019), (244, 17025),

Gene: Lorelei\_20 Start: 15829, Stop: 17040, Start Num: 62

Candidate Starts for Lorelei\_20:

(Start: 62 @15829 has 107 MA's), (66, 15856), (94, 16009), (105, 16039), (111, 16102), (120, 16201), (123, 16228), (131, 16297), (136, 16351), (137, 16354), (138, 16363), (146, 16408), (156, 16480), (157, 16483), (164, 16546), (167, 16567), (175, 16642), (179, 16696), (186, 16744), (187, 16750), (193, 16786), (194, 16789), (198, 16807), (206, 16849), (242, 17023), (243, 17026), (244, 17032),

Gene: Maneekul\_20 Start: 15826, Stop: 17037, Start Num: 62

Candidate Starts for Maneekul\_20:

(Start: 62 @15826 has 107 MA's), (66, 15853), (105, 16036), (106, 16048), (107, 16051), (120, 16198), (123, 16225), (136, 16348), (146, 16405), (157, 16480), (159, 16507), (162, 16537), (167, 16564), (172, 16615), (187, 16747), (194, 16786), (198, 16804), (204, 16834), (205, 16837), (206, 16846), (212, 16879), (214, 16888), (220, 16939), (233, 16999), (243, 17023), (244, 17029),

Gene: Marav\_23 Start: 16557, Stop: 17768, Start Num: 62

Candidate Starts for Marav\_23:

(Start: 62 @16557 has 107 MA's), (75, 16638), (105, 16767), (106, 16779), (113, 16842), (123, 16956), (125, 16971), (136, 17079), (143, 17112), (156, 17208), (159, 17238), (164, 17274), (166, 17292), (167, 17295), (169, 17316), (181, 17433), (187, 17478), (189, 17493), (206, 17577), (208, 17583), (219, 17658), (220, 17670), (241, 17745), (243, 17754), (244, 17760),

Gene: MortySmith\_29 Start: 17815, Stop: 19581, Start Num: 59

Candidate Starts for MortySmith\_29:

(Start: 59 @17815 has 29 MA's), (77, 17917), (89, 17980), (109, 18103), (110, 18106), (112, 18112), (123, 18241), (124, 18253), (162, 18565), (169, 18613), (189, 18790), (191, 18799), (199, 18835), (213, 18916), (227, 19021), (234, 19036), (245, 19072), (266, 19255), (283, 19384), (308, 19561),

Gene: Nabi\_20 Start: 15829, Stop: 17040, Start Num: 62

Candidate Starts for Nabi\_20:

(Start: 62 @15829 has 107 MA's), (66, 15856), (94, 16009), (105, 16039), (111, 16102), (120, 16201), (123, 16228), (131, 16297), (136, 16351), (137, 16354), (138, 16363), (146, 16408), (156, 16480), (157, 16483), (164, 16546), (167, 16567), (175, 16642), (179, 16696), (186, 16744), (187, 16750), (193, 16786), (194, 16789), (198, 16807), (206, 16849), (242, 17023), (243, 17026), (244, 17032),

Gene: Nanodon\_22 Start: 16037, Stop: 17248, Start Num: 62

Candidate Starts for Nanodon\_22:

(Start: 62 @16037 has 107 MA's), (66, 16064), (94, 16217), (105, 16247), (111, 16310), (120, 16409), (121, 16421), (123, 16436), (131, 16505), (136, 16559), (156, 16688), (157, 16691), (164, 16754), (166, 16772), (187, 16958), (193, 16994), (194, 16997), (198, 17015), (206, 17057), (220, 17150), (243, 17234), (244, 17240),

Gene: NarutoRun\_31 Start: 18678, Stop: 20456, Start Num: 59

Candidate Starts for NarutoRun\_31:

(32, 18513), (50, 18636), (51, 18639), (Start: 59 @18678 has 29 MA's), (77, 18780), (80, 18801), (89, 18843), (96, 18879), (109, 18966), (123, 19104), (132, 19194), (145, 19296), (162, 19431), (169, 19479), (176, 19560), (184, 19626), (189, 19656), (191, 19665), (196, 19692), (199, 19701), (220, 19836), (227, 19887), (234, 19902), (245, 19938), (251, 19986), (266, 20121), (308, 20436),

Gene: Neptune\_31 Start: 18655, Stop: 20433, Start Num: 59

Candidate Starts for Neptune\_31:

(32, 18490), (51, 18616), (Start: 59 @18655 has 29 MA's), (77, 18757), (80, 18778), (89, 18820), (96, 18856), (109, 18943), (123, 19081), (132, 19171), (145, 19273), (161, 19399), (162, 19408), (169, 19456), (176, 19537), (184, 19603), (189, 19633), (191, 19642), (196, 19669), (199, 19678), (220, 19813), (227, 19864), (234, 19879), (245, 19915), (251, 19963), (259, 20059), (266, 20098), (308, 20413),

Gene: Nerdos\_20 Start: 15854, Stop: 17068, Start Num: 62

Candidate Starts for Nerdos\_20:

(Start: 62 @15854 has 107 MA's), (66, 15881), (105, 16064), (111, 16127), (120, 16226), (123, 16253), (131, 16322), (135, 16352), (153, 16472), (164, 16571), (186, 16769), (187, 16775), (194, 16814), (200, 16838), (205, 16865), (206, 16874), (212, 16907), (220, 16967), (223, 16997), (241, 17045), (243, 17054), (244, 17060),

Gene: Nishikigoi\_20 Start: 16338, Stop: 17552, Start Num: 62

Candidate Starts for Nishikigoi\_20:

(Start: 62 @16338 has 107 MA's), (66, 16365), (80, 16446), (96, 16524), (102, 16542), (106, 16560), (107, 16563), (113, 16623), (123, 16737), (131, 16806), (136, 16860), (146, 16917), (181, 17214), (187, 17259), (200, 17322), (220, 17451), (241, 17529), (243, 17538), (244, 17544),

Gene: Oliynyk\_21 Start: 16017, Stop: 17219, Start Num: 62

Candidate Starts for Oliynyk\_21:

(Start: 62 @16017 has 107 MA's), (66, 16044), (105, 16227), (111, 16290), (120, 16389), (123, 16416), (131, 16485), (135, 16515), (186, 16932), (187, 16938), (194, 16977), (199, 16998), (205, 17028), (206, 17037), (212, 17070), (222, 17151), (238, 17193), (241, 17196), (243, 17205), (244, 17211),

Gene: Omar\_21 Start: 16673, Stop: 17887, Start Num: 62

Candidate Starts for Omar\_21:

(Start: 62 @16673 has 107 MA's), (66, 16700), (96, 16859), (102, 16877), (105, 16883), (106, 16895), (107, 16898), (113, 16958), (123, 17072), (131, 17141), (136, 17195), (143, 17228), (146, 17252), (159, 17354), (160, 17360), (184, 17579), (185, 17585), (187, 17594), (207, 17696), (220, 17786), (241, 17864), (243, 17873), (244, 17879),

Gene: OverHedge\_31 Start: 18645, Stop: 20423, Start Num: 59

Candidate Starts for OverHedge\_31:

(32, 18480), (51, 18606), (Start: 59 @18645 has 29 MA's), (77, 18747), (80, 18768), (89, 18810), (96, 18846), (109, 18933), (123, 19071), (132, 19161), (145, 19263), (161, 19389), (162, 19398), (169, 19446), (176, 19527), (184, 19593), (189, 19623), (191, 19632), (196, 19659), (199, 19668), (220, 19803), (227, 19854), (234, 19869), (245, 19905), (251, 19953), (266, 20088), (308, 20403),

Gene: Ozzie\_20 Start: 15834, Stop: 17048, Start Num: 62

Candidate Starts for Ozzie\_20:

(Start: 62 @15834 has 107 MA's), (66, 15861), (105, 16044), (111, 16107), (120, 16206), (123, 16233), (131, 16302), (135, 16332), (153, 16452), (164, 16551), (186, 16749), (187, 16755), (194, 16794), (200, 16818), (205, 16845), (206, 16854), (212, 16887), (220, 16947), (223, 16977), (241, 17025), (243, 17034), (244, 17040),

Gene: OzzyJ\_21 Start: 15821, Stop: 17032, Start Num: 62

Candidate Starts for OzzyJ\_21:

(Start: 62 @15821 has 107 MA's), (105, 16031), (106, 16043), (107, 16046), (111, 16094), (120, 16193), (123, 16220), (131, 16289), (136, 16343), (146, 16400), (157, 16475), (159, 16502), (162, 16532), (166, 16556), (172, 16610), (179, 16688), (187, 16742), (194, 16781), (198, 16799), (205, 16832), (206, 16841), (212, 16874), (214, 16883), (220, 16934), (243, 17018), (244, 17024),

Gene: Pablito\_20 Start: 15663, Stop: 16874, Start Num: 62

Candidate Starts for Pablito\_20:

(Start: 62 @15663 has 107 MA's), (80, 15771), (81, 15786), (105, 15873), (106, 15885), (107, 15888), (113, 15948), (123, 16062), (125, 16077), (136, 16185), (143, 16218), (156, 16314), (159, 16344), (164, 16380), (166, 16398), (167, 16401), (169, 16422), (181, 16539), (187, 16584), (189, 16599), (199, 16644), (205, 16674), (219, 16764), (220, 16776), (238, 16848), (241, 16851), (243, 16860), (244, 16866),

Gene: Paedore\_20 Start: 15822, Stop: 17033, Start Num: 62

Candidate Starts for Paedore\_20:

(Start: 62 @15822 has 107 MA's), (80, 15930), (105, 16032), (106, 16044), (107, 16047), (113, 16107), (123, 16221), (125, 16236), (136, 16344), (143, 16377), (146, 16401), (156, 16473), (159, 16503), (166, 16557), (167, 16560), (169, 16581), (181, 16698), (187, 16743), (189, 16758), (206, 16842), (207, 16845), (208, 16848), (214, 16884), (219, 16923), (220, 16935), (224, 16974), (238, 17007), (241, 17010), (243, 17019), (244, 17025),

Gene: Paolo\_22 Start: 16220, Stop: 17431, Start Num: 62

Candidate Starts for Paolo\_22:

(Start: 62 @16220 has 107 MA's), (75, 16301), (105, 16430), (106, 16442), (113, 16505), (123, 16619), (125, 16634), (136, 16742), (143, 16775), (146, 16799), (156, 16871), (164, 16937), (166, 16955), (167, 16958), (169, 16979), (181, 17096), (187, 17141), (189, 17156), (206, 17240), (208, 17246), (219, 17321), (220, 17333), (241, 17408), (243, 17417), (244, 17423),

Gene: Pavo\_21 Start: 16533, Stop: 17750, Start Num: 62

Candidate Starts for Pavo\_21:

(Start: 62 @16533 has 107 MA's), (66, 16560), (74, 16611), (105, 16743), (116, 16845), (131, 17001), (135, 17031), (136, 17055), (143, 17088), (146, 17112), (157, 17187), (164, 17250), (187, 17454), (189, 17469), (199, 17514), (203, 17535), (206, 17553), (220, 17646), (223, 17676), (243, 17736), (244, 17742),

Gene: Pharpay\_31 Start: 18700, Stop: 20478, Start Num: 59

Candidate Starts for Pharpay\_31:

(32, 18535), (51, 18661), (Start: 59 @18700 has 29 MA's), (77, 18802), (80, 18823), (89, 18865), (96, 18901), (109, 18988), (123, 19126), (132, 19216), (162, 19453), (169, 19501), (176, 19582), (184, 19648), (189, 19678), (191, 19687), (199, 19723), (220, 19858), (227, 19909), (234, 19924), (245, 19960), (251, 20008), (259, 20104), (266, 20143), (308, 20458),

Gene: Phettuccine\_20 Start: 15854, Stop: 17068, Start Num: 62

Candidate Starts for Phettuccine\_20:

(Start: 62 @15854 has 107 MA's), (66, 15881), (105, 16064), (111, 16127), (120, 16226), (123, 16253), (131, 16322), (135, 16352), (153, 16472), (164, 16571), (186, 16769), (187, 16775), (194, 16814), (200, 16838), (205, 16865), (206, 16874), (212, 16907), (220, 16967), (223, 16997), (241, 17045), (243, 17054), (244, 17060),

Gene: PhunaPhoke\_31 Start: 18673, Stop: 20451, Start Num: 59

Candidate Starts for PhunaPhoke\_31:

(32, 18508), (51, 18634), (Start: 59 @18673 has 29 MA's), (77, 18775), (80, 18796), (89, 18838), (96, 18874), (109, 18961), (123, 19099), (132, 19189), (145, 19291), (161, 19417), (162, 19426), (169,

19474), (176, 19555), (184, 19621), (189, 19651), (191, 19660), (196, 19687), (199, 19696), (220, 19831), (227, 19882), (234, 19897), (245, 19933), (251, 19981), (259, 20077), (266, 20116), (308, 20431),

Gene: Potty\_31 Start: 18678, Stop: 20456, Start Num: 59

Candidate Starts for Potty\_31:

(32, 18513), (51, 18639), (Start: 59 @18678 has 29 MA's), (77, 18780), (80, 18801), (89, 18843), (96, 18879), (109, 18966), (123, 19104), (132, 19194), (145, 19296), (162, 19431), (169, 19479), (176, 19560), (184, 19626), (189, 19656), (191, 19665), (199, 19701), (220, 19836), (227, 19887), (234, 19902), (245, 19938), (251, 19986), (266, 20121), (308, 20436),

Gene: Poultress\_30 Start: 18442, Stop: 20820, Start Num: 2

Candidate Starts for Poultress\_30:

(Start: 2 @18442 has 2 MA's), (8, 18637), (20, 18751), (25, 18808), (30, 18880), (47, 18994), (48, 18997), (52, 19018), (54, 19024), (77, 19156), (89, 19219), (109, 19342), (110, 19345), (112, 19351), (120, 19453), (123, 19480), (124, 19492), (139, 19633), (152, 19702), (162, 19804), (169, 19852), (177, 19936), (184, 19999), (189, 20029), (191, 20038), (196, 20065), (199, 20074), (209, 20128), (213, 20155), (227, 20260), (232, 20272), (234, 20275), (245, 20311), (251, 20359), (266, 20494), (283, 20623), (298, 20728), (305, 20788), (308, 20800),

Gene: Provolone\_21 Start: 16263, Stop: 17480, Start Num: 62

Candidate Starts for Provolone\_21:

(Start: 62 @16263 has 107 MA's), (66, 16290), (74, 16341), (105, 16473), (116, 16575), (131, 16731), (135, 16761), (136, 16785), (143, 16818), (146, 16842), (157, 16917), (164, 16980), (169, 17022), (184, 17169), (187, 17184), (189, 17199), (199, 17244), (203, 17265), (206, 17283), (220, 17376), (223, 17406), (243, 17466), (244, 17472),

Gene: Puginator\_22 Start: 16265, Stop: 17476, Start Num: 62

Candidate Starts for Puginator\_22:

(Start: 62 @16265 has 107 MA's), (105, 16475), (106, 16487), (113, 16550), (123, 16664), (125, 16679), (136, 16787), (143, 16820), (146, 16844), (156, 16916), (164, 16982), (166, 17000), (167, 17003), (169, 17024), (181, 17141), (187, 17186), (189, 17201), (219, 17366), (220, 17378), (241, 17453), (243, 17462), (244, 17468),

Gene: R4\_20 Start: 15904, Stop: 17115, Start Num: 62

Candidate Starts for R4\_20:

(Start: 62 @15904 has 107 MA's), (80, 16012), (105, 16114), (106, 16126), (107, 16129), (113, 16189), (123, 16303), (125, 16318), (136, 16426), (143, 16459), (146, 16483), (156, 16555), (159, 16585), (166, 16639), (167, 16642), (169, 16663), (181, 16780), (187, 16825), (189, 16840), (206, 16924), (207, 16927), (208, 16930), (214, 16966), (219, 17005), (220, 17017), (224, 17056), (241, 17092), (243, 17101), (244, 17107),

Gene: Rachella\_31 Start: 18681, Stop: 20459, Start Num: 59

Candidate Starts for Rachella\_31:

(32, 18516), (51, 18642), (Start: 59 @18681 has 29 MA's), (77, 18783), (80, 18804), (89, 18846), (96, 18882), (109, 18969), (123, 19107), (132, 19197), (145, 19299), (162, 19434), (169, 19482), (176, 19563), (184, 19629), (189, 19659), (191, 19668), (196, 19695), (199, 19704), (220, 19839), (227, 19890), (234, 19905), (245, 19941), (251, 19989), (259, 20085), (266, 20124), (289, 20295), (308, 20439),

Gene: Rana\_20 Start: 15829, Stop: 17040, Start Num: 62

Candidate Starts for Rana\_20:



(Start: 62 @15829 has 107 MA's), (66, 15856), (94, 16009), (105, 16039), (111, 16102), (120, 16201), (123, 16228), (131, 16297), (136, 16351), (137, 16354), (138, 16363), (146, 16408), (156, 16480), (157, 16483), (164, 16546), (167, 16567), (175, 16642), (179, 16696), (186, 16744), (187, 16750), (193, 16786), (194, 16789), (198, 16807), (206, 16849), (242, 17023), (243, 17026), (244, 17032),

Gene: RedBear\_22 Start: 16096, Stop: 17307, Start Num: 62

Candidate Starts for RedBear\_22:

(Start: 62 @16096 has 107 MA's), (66, 16123), (94, 16276), (105, 16306), (111, 16369), (120, 16468), (123, 16495), (131, 16564), (146, 16675), (156, 16747), (157, 16750), (159, 16777), (164, 16813), (167, 16834), (187, 17017), (193, 17053), (194, 17056), (198, 17074), (206, 17116), (220, 17209), (243, 17293), (244, 17299),

Gene: Rie18\_31 Start: 18192, Stop: 19970, Start Num: 59

Candidate Starts for Rie18\_31:

(53, 18162), (55, 18165), (56, 18177), (57, 18189), (Start: 59 @18192 has 29 MA's), (77, 18294), (89, 18357), (109, 18480), (123, 18618), (124, 18630), (132, 18708), (145, 18810), (162, 18945), (169, 18993), (177, 19077), (184, 19140), (189, 19170), (191, 19179), (196, 19206), (199, 19215), (213, 19296), (220, 19350), (227, 19401), (234, 19416), (251, 19500), (266, 19635), (274, 19725), (308, 19950),

Gene: Rollins\_17 Start: 12526, Stop: 14229, Start Num: 61

Candidate Starts for Rollins\_17:

(Start: 61 @12526 has 11 MA's), (70, 12574), (78, 12619), (102, 12742), (106, 12772), (123, 12946), (124, 12958), (164, 13264), (165, 13267), (178, 13393), (182, 13444), (189, 13483), (192, 13495), (198, 13525), (200, 13531), (206, 13567), (263, 13933), (273, 14023), (306, 14203), (307, 14206),

Gene: Rusticus\_21 Start: 16017, Stop: 17219, Start Num: 62

Candidate Starts for Rusticus\_21:

(Start: 62 @16017 has 107 MA's), (66, 16044), (105, 16227), (111, 16290), (120, 16389), (123, 16416), (131, 16485), (135, 16515), (186, 16932), (187, 16938), (194, 16977), (199, 16998), (205, 17028), (206, 17037), (212, 17070), (222, 17151), (238, 17193), (241, 17196), (243, 17205), (244, 17211),

Gene: Saftant\_20 Start: 16811, Stop: 18028, Start Num: 62

Candidate Starts for Saftant\_20:

(Start: 62 @16811 has 107 MA's), (73, 16886), (74, 16889), (105, 17021), (131, 17279), (135, 17309), (136, 17333), (143, 17366), (146, 17390), (159, 17492), (164, 17528), (187, 17732), (189, 17747), (199, 17792), (205, 17822), (206, 17831), (222, 17945), (223, 17954), (243, 18014), (244, 18020),

Gene: SarahRose\_20 Start: 15827, Stop: 17038, Start Num: 62

Candidate Starts for SarahRose\_20:

(Start: 62 @15827 has 107 MA's), (105, 16037), (106, 16049), (107, 16052), (111, 16100), (120, 16199), (123, 16226), (131, 16295), (136, 16349), (146, 16406), (157, 16481), (159, 16508), (162, 16538), (166, 16562), (172, 16616), (179, 16694), (187, 16748), (198, 16805), (205, 16838), (206, 16847), (212, 16880), (214, 16889), (220, 16940), (243, 17024), (244, 17030),

Gene: Shayna\_17 Start: 13717, Stop: 15447, Start Num: 60

Candidate Starts for Shayna\_17:

(Start: 60 @13717 has 1 MA's), (Start: 61 @13720 has 11 MA's), (64, 13741), (67, 13759), (98, 13918), (106, 13948), (108, 13960), (123, 14122), (128, 14167), (195, 14692), (256, 15013), (295, 15313), (297, 15337), (307, 15409),

Gene: Skylord\_17 Start: 12466, Stop: 14169, Start Num: 61

Candidate Starts for Skylord\_17:

(Start: 61 @12466 has 11 MA's), (70, 12514), (78, 12559), (102, 12682), (106, 12712), (123, 12886), (164, 13204), (165, 13207), (178, 13333), (182, 13384), (189, 13423), (192, 13435), (198, 13465), (200, 13471), (203, 13489), (206, 13507), (228, 13654), (235, 13669), (237, 13678), (247, 13717), (263, 13873), (273, 13963), (306, 14143), (307, 14146),

Gene: Snakehole\_31 Start: 17937, Stop: 19706, Start Num: 59

Candidate Starts for Snakehole\_31:

(Start: 59 @17937 has 29 MA's), (77, 18039), (89, 18102), (109, 18225), (110, 18228), (112, 18234), (123, 18363), (124, 18375), (132, 18453), (144, 18543), (152, 18588), (162, 18690), (169, 18738), (184, 18885), (189, 18915), (191, 18924), (196, 18951), (199, 18960), (213, 19041), (220, 19095), (227, 19146), (234, 19161), (245, 19197), (257, 19335), (278, 19491), (283, 19509), (308, 19686),

Gene: Snorlax\_20 Start: 15830, Stop: 17041, Start Num: 62

Candidate Starts for Snorlax\_20:

(Start: 62 @15830 has 107 MA's), (105, 16040), (106, 16052), (107, 16055), (111, 16103), (120, 16202), (123, 16229), (131, 16298), (136, 16352), (146, 16409), (157, 16484), (159, 16511), (162, 16541), (166, 16565), (172, 16619), (179, 16697), (187, 16751), (194, 16790), (198, 16808), (205, 16841), (206, 16850), (212, 16883), (214, 16892), (220, 16943), (243, 17027), (244, 17033),

Gene: South40\_21 Start: 16096, Stop: 17307, Start Num: 62

Candidate Starts for South40\_21:

(Start: 62 @16096 has 107 MA's), (66, 16123), (94, 16276), (105, 16306), (111, 16369), (120, 16468), (123, 16495), (131, 16564), (146, 16675), (156, 16747), (157, 16750), (159, 16777), (164, 16813), (167, 16834), (187, 17017), (193, 17053), (194, 17056), (198, 17074), (206, 17116), (220, 17209), (243, 17293), (244, 17299),

Gene: Speedwell\_25 Start: 18557, Stop: 19774, Start Num: 62

Candidate Starts for Speedwell\_25:

(Start: 62 @18557 has 107 MA's), (66, 18584), (74, 18635), (105, 18767), (110, 18827), (111, 18830), (120, 18929), (131, 19025), (143, 19112), (157, 19211), (159, 19238), (164, 19274), (187, 19478), (189, 19493), (199, 19538), (206, 19577), (207, 19580), (222, 19691), (243, 19760), (244, 19766),

Gene: SqueakyClean\_21 Start: 15829, Stop: 17040, Start Num: 62

Candidate Starts for SqueakyClean\_21:

(Start: 62 @15829 has 107 MA's), (105, 16039), (106, 16051), (107, 16054), (113, 16114), (114, 16126), (123, 16228), (125, 16243), (130, 16294), (156, 16480), (164, 16546), (167, 16567), (181, 16705), (187, 16750), (189, 16765), (199, 16810), (200, 16813), (205, 16840), (206, 16849), (220, 16942), (243, 17026), (244, 17032),

Gene: Sujidade\_21 Start: 16135, Stop: 17346, Start Num: 62

Candidate Starts for Sujidade\_21:

(Start: 62 @16135 has 107 MA's), (66, 16162), (105, 16345), (106, 16357), (107, 16360), (111, 16408), (120, 16507), (123, 16534), (131, 16603), (136, 16657), (146, 16714), (157, 16789), (162, 16846), (167, 16873), (187, 17056), (194, 17095), (204, 17143), (205, 17146), (206, 17155), (212, 17188), (243, 17332), (244, 17338),

Gene: SunnyD\_19 Start: 13717, Stop: 15447, Start Num: 60

Candidate Starts for SunnyD\_19:

(Start: 60 @13717 has 1 MA's), (Start: 61 @13720 has 11 MA's), (64, 13741), (67, 13759), (98, 13918), (106, 13948), (108, 13960), (123, 14122), (128, 14167), (195, 14692), (256, 15013), (295, 15313), (297, 15337), (307, 15409),

Gene: SunsetPointe\_20 Start: 15844, Stop: 17058, Start Num: 62

Candidate Starts for SunsetPointe\_20:

(Start: 62 @15844 has 107 MA's), (66, 15871), (105, 16054), (111, 16117), (120, 16216), (123, 16243), (131, 16312), (135, 16342), (153, 16462), (164, 16561), (186, 16759), (187, 16765), (194, 16804), (200, 16828), (205, 16855), (206, 16864), (212, 16897), (220, 16957), (223, 16987), (241, 17035), (243, 17044), (244, 17050),

Gene: Superstar\_23 Start: 17541, Stop: 18755, Start Num: 62

Candidate Starts for Superstar\_23:

(Start: 62 @17541 has 107 MA's), (66, 17568), (96, 17727), (106, 17763), (107, 17766), (113, 17826), (123, 17940), (131, 18009), (136, 18063), (146, 18120), (164, 18258), (187, 18462), (214, 18603), (220, 18654), (241, 18732), (243, 18741), (244, 18747),

Gene: TagePhighter\_21 Start: 15830, Stop: 17041, Start Num: 62

Candidate Starts for TagePhighter\_21:

(Start: 62 @15830 has 107 MA's), (105, 16040), (106, 16052), (107, 16055), (111, 16103), (120, 16202), (123, 16229), (131, 16298), (136, 16352), (146, 16409), (157, 16484), (159, 16511), (162, 16541), (166, 16565), (172, 16619), (179, 16697), (187, 16751), (194, 16790), (198, 16808), (205, 16841), (206, 16850), (212, 16883), (214, 16892), (220, 16943), (243, 17027), (244, 17033),

Gene: Teagster\_20 Start: 15351, Stop: 16520, Start Num: 60

Candidate Starts for Teagster\_20:

(Start: 60 @15351 has 1 MA's), (Start: 62 @15357 has 107 MA's), (66, 15381), (76, 15438), (80, 15462), (106, 15579), (108, 15591), (113, 15642), (114, 15654), (117, 15672), (123, 15753), (128, 15798), (131, 15822), (216, 16431), (225, 16509),

Gene: Tedro\_31 Start: 18151, Stop: 19929, Start Num: 59

Candidate Starts for Tedro\_31:

(32, 17986), (51, 18112), (Start: 59 @18151 has 29 MA's), (77, 18253), (80, 18274), (89, 18316), (96, 18352), (109, 18439), (123, 18577), (132, 18667), (145, 18769), (161, 18895), (162, 18904), (169, 18952), (176, 19033), (184, 19099), (189, 19129), (191, 19138), (196, 19165), (199, 19174), (220, 19309), (227, 19360), (234, 19375), (245, 19411), (251, 19459), (259, 19555), (266, 19594), (289, 19765), (308, 19909),

Gene: Tefunt\_20 Start: 16338, Stop: 17552, Start Num: 62

Candidate Starts for Tefunt\_20:

(Start: 62 @16338 has 107 MA's), (66, 16365), (80, 16446), (96, 16524), (102, 16542), (106, 16560), (107, 16563), (113, 16623), (123, 16737), (136, 16860), (146, 16917), (181, 17214), (187, 17259), (200, 17322), (220, 17451), (241, 17529), (243, 17538), (244, 17544),

Gene: Teng\_24 Start: 15125, Stop: 16837, Start Num: 62

Candidate Starts for Teng\_24:

(Start: 62 @15125 has 107 MA's), (86, 15272), (87, 15275), (101, 15341), (115, 15437), (127, 15581), (132, 15659), (134, 15677), (140, 15731), (145, 15764), (146, 15767), (147, 15773), (152, 15797), (156, 15839), (158, 15857), (164, 15905), (174, 15989), (176, 16028), (177, 16031), (185, 16097), (189, 16121), (196, 16157), (200, 16169), (209, 16217), (210, 16232), (211, 16235), (215, 16259), (217, 16274), (222, 16319), (231, 16358), (240, 16382), (248, 16433), (249, 16436), (255, 16490), (258, 16541), (260, 16547), (270, 16631), (279, 16688), (290, 16745),

Gene: Thestral\_21 Start: 15797, Stop: 17008, Start Num: 62

Candidate Starts for Thestral\_21:

(Start: 62 @15797 has 107 MA's), (105, 16007), (106, 16019), (107, 16022), (113, 16082), (123, 16196), (125, 16211), (130, 16262), (146, 16376), (156, 16448), (164, 16514), (167, 16535), (181,

16673), (187, 16718), (189, 16733), (203, 16799), (206, 16817), (214, 16859), (217, 16886), (220, 16910), (243, 16994), (244, 17000),

Gene: TinaBelcher\_20 Start: 15745, Stop: 16956, Start Num: 62

Candidate Starts for TinaBelcher\_20:

(Start: 62 @15745 has 107 MA's), (105, 15955), (106, 15967), (107, 15970), (113, 16030), (123, 16144), (125, 16159), (130, 16210), (136, 16267), (146, 16324), (156, 16396), (164, 16462), (167, 16483), (169, 16504), (181, 16621), (187, 16666), (189, 16681), (203, 16747), (206, 16765), (214, 16807), (217, 16834), (220, 16858), (243, 16942), (244, 16948),

Gene: Toma\_20 Start: 15844, Stop: 17055, Start Num: 62

Candidate Starts for Toma\_20:

(Start: 62 @15844 has 107 MA's), (66, 15871), (91, 15997), (94, 16024), (105, 16054), (111, 16117), (120, 16216), (123, 16243), (131, 16312), (136, 16366), (138, 16378), (146, 16423), (156, 16495), (157, 16498), (164, 16561), (167, 16582), (175, 16657), (186, 16759), (187, 16765), (193, 16801), (194, 16804), (198, 16822), (206, 16864), (242, 17038), (243, 17041), (244, 17047),

Gene: Triste\_20 Start: 15821, Stop: 17032, Start Num: 62

Candidate Starts for Triste\_20:

(Start: 62 @15821 has 107 MA's), (105, 16031), (106, 16043), (107, 16046), (111, 16094), (120, 16193), (123, 16220), (131, 16289), (136, 16343), (146, 16400), (157, 16475), (159, 16502), (162, 16532), (166, 16556), (172, 16610), (179, 16688), (187, 16742), (194, 16781), (198, 16799), (205, 16832), (206, 16841), (212, 16874), (214, 16883), (220, 16934), (243, 17018), (244, 17024),

Gene: Triumph\_22 Start: 15746, Stop: 16957, Start Num: 62

Candidate Starts for Triumph\_22:

(Start: 62 @15746 has 107 MA's), (92, 15902), (105, 15956), (106, 15968), (107, 15971), (113, 16031), (123, 16145), (125, 16160), (130, 16211), (146, 16325), (154, 16385), (156, 16397), (164, 16463), (167, 16484), (181, 16622), (185, 16658), (187, 16667), (189, 16682), (199, 16727), (200, 16730), (205, 16757), (206, 16766), (220, 16859), (226, 16907), (241, 16934), (243, 16943), (244, 16949),

Gene: TrvxScott\_19 Start: 15747, Stop: 16958, Start Num: 62

Candidate Starts for TrvxScott\_19:

(Start: 62 @15747 has 107 MA's), (105, 15957), (106, 15969), (107, 15972), (113, 16032), (123, 16146), (125, 16161), (130, 16212), (136, 16269), (146, 16326), (156, 16398), (164, 16464), (167, 16485), (181, 16623), (187, 16668), (189, 16683), (203, 16749), (206, 16767), (214, 16809), (217, 16836), (220, 16860), (243, 16944), (244, 16950),

Gene: TuanPN\_20 Start: 15827, Stop: 17038, Start Num: 62

Candidate Starts for TuanPN\_20:

(Start: 62 @15827 has 107 MA's), (66, 15854), (105, 16037), (106, 16049), (107, 16052), (120, 16199), (123, 16226), (136, 16349), (146, 16406), (157, 16481), (159, 16508), (162, 16538), (167, 16565), (172, 16616), (187, 16748), (194, 16787), (198, 16805), (204, 16835), (205, 16838), (206, 16847), (212, 16880), (214, 16889), (220, 16940), (233, 17000), (243, 17024), (244, 17030),

Gene: Unstoppable\_20 Start: 15845, Stop: 17059, Start Num: 62

Candidate Starts for Unstoppable\_20:

(Start: 62 @15845 has 107 MA's), (66, 15872), (105, 16055), (111, 16118), (120, 16217), (123, 16244), (131, 16313), (135, 16343), (153, 16463), (164, 16562), (186, 16760), (187, 16766), (194, 16805), (200, 16829), (205, 16856), (206, 16865), (212, 16898), (220, 16958), (223, 16988), (241, 17036), (243, 17045), (244, 17051),

Gene: Urza\_20 Start: 16212, Stop: 17432, Start Num: 62

Candidate Starts for Urza\_20:

(Start: 62 @16212 has 107 MA's), (69, 16254), (77, 16299), (92, 16368), (102, 16416), (105, 16422), (122, 16608), (123, 16611), (126, 16635), (131, 16680), (136, 16734), (159, 16893), (164, 16929), (183, 17112), (189, 17148), (194, 17172), (198, 17190), (200, 17196), (206, 17232), (214, 17274), (236, 17400), (243, 17418), (244, 17424),

Gene: Vanseggelen\_25 Start: 16195, Stop: 17409, Start Num: 62

Candidate Starts for Vanseggelen\_25:

(Start: 62 @16195 has 107 MA's), (66, 16222), (74, 16273), (105, 16405), (110, 16465), (111, 16468), (120, 16567), (131, 16663), (133, 16675), (143, 16750), (146, 16774), (157, 16849), (159, 16876), (164, 16912), (187, 17116), (189, 17131), (198, 17173), (199, 17176), (206, 17215), (222, 17329), (243, 17395), (244, 17401),

Gene: Verabelle\_21 Start: 16526, Stop: 17743, Start Num: 62

Candidate Starts for Verabelle\_21:

(Start: 62 @16526 has 107 MA's), (66, 16553), (74, 16604), (94, 16706), (105, 16736), (110, 16796), (111, 16799), (116, 16838), (131, 16994), (135, 17024), (143, 17081), (145, 17102), (157, 17180), (159, 17207), (164, 17243), (187, 17447), (189, 17462), (206, 17546), (220, 17639), (222, 17660), (243, 17729), (244, 17735),

Gene: Verse\_20 Start: 16825, Stop: 18042, Start Num: 62

Candidate Starts for Verse\_20:

(Start: 62 @16825 has 107 MA's), (66, 16852), (74, 16903), (94, 17005), (105, 17035), (110, 17095), (116, 17137), (120, 17197), (131, 17293), (135, 17323), (143, 17380), (145, 17401), (157, 17479), (164, 17542), (187, 17746), (189, 17761), (203, 17827), (206, 17845), (220, 17938), (223, 17968), (243, 18028), (244, 18034),

Gene: VieEnRose\_20 Start: 16278, Stop: 17498, Start Num: 62

Candidate Starts for VieEnRose\_20:

(Start: 62 @16278 has 107 MA's), (69, 16320), (77, 16365), (92, 16434), (102, 16482), (105, 16488), (122, 16674), (123, 16677), (131, 16746), (136, 16800), (150, 16875), (159, 16959), (164, 16995), (171, 17055), (183, 17178), (189, 17214), (194, 17238), (198, 17256), (200, 17262), (206, 17298), (214, 17340), (222, 17412), (243, 17484), (244, 17490),

Gene: Vitas\_17 Start: 12466, Stop: 14169, Start Num: 61

Candidate Starts for Vitas\_17:

(Start: 61 @12466 has 11 MA's), (70, 12514), (78, 12559), (102, 12682), (106, 12712), (123, 12886), (124, 12898), (164, 13204), (165, 13207), (178, 13333), (182, 13384), (189, 13423), (192, 13435), (198, 13465), (200, 13471), (206, 13507), (264, 13879), (273, 13963), (306, 14143), (307, 14146),

Gene: Werner\_20 Start: 15831, Stop: 17042, Start Num: 62

Candidate Starts for Werner\_20:

(Start: 62 @15831 has 107 MA's), (105, 16041), (106, 16053), (107, 16056), (111, 16104), (120, 16203), (123, 16230), (131, 16299), (136, 16353), (146, 16410), (157, 16485), (159, 16512), (162, 16542), (166, 16566), (172, 16620), (179, 16698), (187, 16752), (194, 16791), (198, 16809), (205, 16842), (206, 16851), (212, 16884), (214, 16893), (220, 16944), (243, 17028), (244, 17034),

Gene: Whatever\_20 Start: 15831, Stop: 17042, Start Num: 62

Candidate Starts for Whatever\_20:

(Start: 62 @15831 has 107 MA's), (105, 16041), (106, 16053), (107, 16056), (111, 16104), (120, 16203), (123, 16230), (131, 16299), (136, 16353), (146, 16410), (157, 16485), (159, 16512), (162, 16542), (166, 16566), (172, 16620), (179, 16698), (187, 16752), (194, 16791), (198, 16809), (205,

16842), (206, 16851), (212, 16884), (214, 16893), (220, 16944), (243, 17028), (244, 17034),

Gene: Yasdni\_20 Start: 15823, Stop: 17034, Start Num: 62

Candidate Starts for Yasdni\_20:

(Start: 62 @15823 has 107 MA's), (66, 15850), (105, 16033), (106, 16045), (107, 16048), (120, 16195), (123, 16222), (136, 16345), (146, 16402), (157, 16477), (159, 16504), (162, 16534), (167, 16561), (172, 16612), (187, 16744), (194, 16783), (198, 16801), (204, 16831), (205, 16834), (206, 16843), (212, 16876), (214, 16885), (220, 16936), (233, 16996), (243, 17020), (244, 17026),

Gene: Yosif\_21 Start: 16799, Stop: 17983, Start Num: 62

Candidate Starts for Yosif\_21:

(Start: 62 @16799 has 107 MA's), (74, 16877), (75, 16880), (77, 16886), (102, 17003), (105, 17009), (110, 17069), (118, 17153), (119, 17168), (123, 17198), (136, 17321), (143, 17354), (159, 17480), (164, 17516), (179, 17642), (189, 17711), (194, 17735), (206, 17795), (243, 17969), (244, 17975),

Gene: Zainub\_22 Start: 16178, Stop: 17389, Start Num: 62

Candidate Starts for Zainub\_22:

(Start: 62 @16178 has 107 MA's), (75, 16259), (105, 16388), (106, 16400), (113, 16463), (123, 16577), (125, 16592), (136, 16700), (143, 16733), (146, 16757), (156, 16829), (164, 16895), (166, 16913), (167, 16916), (169, 16937), (181, 17054), (187, 17099), (189, 17114), (206, 17198), (208, 17204), (219, 17279), (220, 17291), (241, 17366), (243, 17375), (244, 17381),

Gene: Zemlya\_21 Start: 15855, Stop: 17066, Start Num: 62

Candidate Starts for Zemlya\_21:

(Start: 62 @15855 has 107 MA's), (66, 15882), (91, 16008), (93, 16014), (94, 16035), (105, 16065), (111, 16128), (120, 16227), (123, 16254), (131, 16323), (136, 16377), (138, 16389), (146, 16434), (156, 16506), (157, 16509), (164, 16572), (167, 16593), (175, 16668), (186, 16770), (187, 16776), (193, 16812), (194, 16815), (198, 16833), (206, 16875), (242, 17049), (243, 17052), (244, 17058),

Gene: phiCAM\_21 Start: 18698, Stop: 19705, Start Num: 105

Candidate Starts for phiCAM\_21:

(Start: 62 @18488 has 107 MA's), (66, 18515), (74, 18566), (105, 18698), (110, 18758), (116, 18800), (131, 18956), (135, 18986), (143, 19043), (146, 19067), (157, 19142), (159, 19169), (164, 19205), (187, 19409), (189, 19424), (199, 19469), (206, 19508), (220, 19601), (223, 19631), (243, 19691), (244, 19697),

Gene: phiHau3\_22 Start: 16517, Stop: 17728, Start Num: 60

Candidate Starts for phiHau3\_22:

(58, 16505), (Start: 60 @16517 has 1 MA's), (Start: 62 @16523 has 107 MA's), (77, 16610), (96, 16709), (106, 16745), (113, 16808), (123, 16922), (124, 16934), (130, 16988), (131, 16991), (135, 17021), (136, 17045), (146, 17102), (153, 17141), (156, 17174), (157, 17177), (161, 17225), (187, 17444), (189, 17459), (199, 17504), (205, 17534), (208, 17549), (214, 17585), (241, 17705), (243, 17714), (244, 17720),