





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 296349 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296349 has 130 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Preamble\_21, Kittykat\_21
- Track 2 : GreenHearts\_25
- Track 3 : Albanese\_25, Lakshmi\_25
- Track 4 : Immaculata\_25, Cholula\_25, Potatoes\_25
- Track 5 : Lasagna\_21
- Track 6 : Glenn\_25, TattModd\_25, Fluke\_25, Carpal\_25, Vallejo\_25
- Track 7 : RAP15\_25, Korra\_26, MeganNoll\_25, Savage2526\_25, MrGloopy\_25, Jumboset\_25, BrotherBLo\_25
- Track 8 : Gisselle\_21, DreamTeam\_21
- Track 9 : Aledel\_21, Supakev\_21, Riovina\_21, Eunoia\_21, OMalley\_21, Chridison\_21
- Track 10 : DrRobert\_21, Lucy\_21, Christian\_21, PitaDog\_21, OurGirlNessie\_21
- Track 11 : PinkFriday\_21, Pumancara\_21
- Track 12 : Greenhouse\_25
- Track 13 : Maria1952\_21, Daiboju\_21, Temper16\_21, KingBob\_21, Herb\_21, Sergei\_21
- Track 14 : Rozby\_25, Beethoven\_25, Riverdale\_25
- Track 15 : Litotes\_25
- Track 16 : HeadNerd\_21, Moki\_21, Bennie\_21, Huckleberry\_21
- Track 17 : AustinPowers\_21
- Track 18 : Huntingdon\_25, RcigaStruga\_25
- Track 19 : WonderBoy\_21
- Track 20 : Suppi\_25, AppleCider\_25, Canowicakte\_25
- Track 21 : Nubia\_25, Oxynfrius\_25
- Track 22 : Graynor\_25
- Track 23 : HunterDalle\_21, Vulture\_21
- Track 24 : Wawa\_25
- Track 25 : CallieOMalley\_25, PartyCup\_25, Wayne\_25
- Track 26 : MrBoss\_25
- Track 27 : Urla\_21
- Track 28 : Nancia\_21, Bodacious\_21, CristinaYang\_21, LilStuart\_21, Lennox\_21, ChewChew\_21
- Track 29 : EstebanJulior\_21, MamaPearl\_21
- Track 30 : Dino\_25, Zorro\_25, Kalizoi\_25
- Track 31 : Misaeng\_25
- Track 32 : BigMack\_21
- Track 33 : Scuttle\_25

- Track 34 : Pterodactyl\_21, Makoto\_21
- Track 35 : Joann\_25
- Track 36 : CookieBear\_27, Aikyam\_27, RadFad\_27, Lasker\_27, Richie\_27, Auxilium\_27, MaterMagnus\_27, BlueShadow\_27, Hillester\_27, Windest\_28, MidnightRain\_27, YoungHarleezy\_27
- Track 37 : BasketStar\_27
- Track 38 : Globfish\_27
- Track 39 : SpicyFrank\_27
- Track 40 : BenchScraper\_27
- Track 41 : Pigu\_22
- Track 42 : Sarge\_22, BrayBeast\_22, Rooter\_22
- Track 43 : Seldom\_25, Dunamis\_23, Swim\_25
- Track 44 : Mendel\_22
- Track 45 : Goodgraces\_21
- Track 46 : Tillums\_26
- Track 47 : Casab\_26
- Track 48 : Anjali\_20
- Track 49 : Bouclier\_22
- Track 50 : Hum25\_23
- Track 51 : CardboardBox\_22, Neuville\_21, ChipsNGuac\_22, Gerri43\_22, ChamoyPickle\_22
- Track 52 : Roberts\_21
- Track 53 : Makima\_22
- Track 54 : LastNadiia\_24
- Track 55 : TMaxx\_21
- Track 56 : Audell\_24
- Track 57 : TripleC\_24
- Track 58 : AnnabelLee\_21
- Track 59 : Agamoto\_23
- Track 60 : ERHickory\_34

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

The start number called the most often in the published annotations is 16, it was called in 84 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese\_25, Aledel\_21, AppleCider\_25, AustinPowers\_21, Beethoven\_25, Bennie\_21, BigMack\_21, Bodacious\_21, BrotherBLo\_25, CallieOMalley\_25, Canowicakte\_25, Carpal\_25, ChewChew\_21, Cholula\_25, Chridison\_21, Christian\_21, CristinaYang\_21, Daiboju\_21, Dino\_25, DrRobert\_21, DreamTeam\_21, EstebanJulior\_21, Eunoia\_21, Fluke\_25, Gisselle\_21, Glenn\_25, Graynor\_25, GreenHearts\_25, Greenhouse\_25, HeadNerd\_21, Herb\_21, Huckleberry\_21, HunterDalle\_21, Huntingdon\_25, Immaculata\_25, Joann\_25, Jumboset\_25, Kalizoi\_25, KingBob\_21, Kittykat\_21, Korra\_26, Lakshmi\_25, Lasagna\_21, Lennox\_21, LilStuart\_21, Litotes\_25, Lucy\_21, Makoto\_21, MamaPearl\_21, Maria1952\_21, MeganNoll\_25, Misaeng\_25, Moki\_21, MrBoss\_25, MrGloopy\_25, Nancia\_21, Nubia\_25, OMalley\_21, OurGirlNessie\_21, Oxyfrieus\_25, PartyCup\_25, PinkFriday\_21, PitaDog\_21, Potatoes\_25, Preamble\_21, Pterodactyl\_21, Pumancara\_21, RAP15\_25, RcigaStruga\_25, Riovina\_21, Riverdale\_25, Rozby\_25,

Savage2526\_25, Scuttle\_25, Sergei\_21, Supakev\_21, Suppi\_25, TattModd\_25, Temper16\_21, Urla\_21, Vallejo\_25, Vulture\_21, Wawa\_25, Wayne\_25, WonderBoy\_21, Zorro\_25,

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

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

- Agamoto\_23, Aikyam\_27, Anjali\_20, AnnabelLee\_21, Audell\_24, Auxilium\_27, BasketStar\_27, BenchScraper\_27, BlueShadow\_27, Bouclier\_22, BrayBeast\_22, CardboardBox\_22, Casab\_26, ChamoyPickle\_22, ChipsNGuac\_22, CookieBear\_27, Dunamis\_23, ERHickory\_34, Gerri43\_22, Globfish\_27, Goodgraces\_21, Hillester\_27, Hum25\_23, Lasker\_27, LastNadiia\_24, Makima\_22, MaterMagnus\_27, Mendel\_22, MidnightRain\_27, Neuville\_21, Pigu\_22, RadFad\_27, Richie\_27, Roberts\_21, Rooter\_22, Sarge\_22, Seldom\_25, SpicyFrank\_27, Swim\_25, TMaxx\_21, Tillums\_26, TripleC\_24, Windest\_28, YoungHarleezy\_27,

### Summary by start number:

Start 13:

- Found in 16 of 130 ( 12.3% ) of genes in pham
- Manual Annotations of this start: 13 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikyam\_27 (AY), Auxilium\_27 (AY), BasketStar\_27 (AY), BenchScraper\_27 (AY), BlueShadow\_27 (AY), CookieBear\_27 (AY), Globfish\_27 (AY), Hillester\_27 (AY), Lasker\_27 (AY), MaterMagnus\_27 (AY), MidnightRain\_27 (AY), RadFad\_27 (AY), Richie\_27 (AY), SpicyFrank\_27 (AY), Windest\_28 (AY), YoungHarleezy\_27 (AY),

Start 16:

- Found in 86 of 130 ( 66.2% ) of genes in pham
- Manual Annotations of this start: 84 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_25 (AK), Aledel\_21 (AK), AppleCider\_25 (AK), AustinPowers\_21 (AK), Beethoven\_25 (AK), Bennie\_21 (AK), BigMack\_21 (AK), Bodacious\_21 (AK), BrotherBLo\_25 (AK), CallieOMalley\_25 (AK), Canowicakte\_25 (AK), Carpal\_25 (AK), ChewChew\_21 (AK), Cholula\_25 (AK), Chridison\_21 (AK), Christian\_21 (AK), CristinaYang\_21 (AK), Daiboju\_21 (AK), Dino\_25 (AK), DrRobert\_21 (AK), DreamTeam\_21 (AK), EstebanJulior\_21 (AK), Eunoia\_21 (AK), Fluke\_25 (AK), Gisselle\_21 (AK), Glenn\_25 (AK), Graynor\_25 (AK), GreenHearts\_25 (AK), Greenhouse\_25 (AK), HeadNerd\_21 (AK), Herb\_21 (AK), Huckleberry\_21 (AK), HunterDalle\_21 (AK), Huntingdon\_25 (AK), Immaculata\_25 (AK), Joann\_25 (AK), Jumboset\_25 (AK), Kalizoi\_25 (AK), KingBob\_21 (AK), Kittykat\_21 (AK), Korra\_26 (AK), Lakshmi\_25 (AK), Lasagna\_21 (AK), Lennox\_21 (AK), LilStuart\_21 (AK), Litotes\_25 (AK), Lucy\_21 (AK), Makoto\_21 (AK), MamaPearl\_21 (AK), Maria1952\_21 (AK), MeganNoll\_25 (AK), Misaeng\_25 (AK), Moki\_21 (AK), MrBoss\_25 (AK), MrGloopy\_25 (AK), Nancia\_21 (AK), Nubia\_25 (AK), OMalley\_21 (AK), OurGirlNessie\_21 (AK), Oxynfrius\_25 (AK), PartyCup\_25 (AK), PinkFriday\_21 (AK), PitaDog\_21 (AK), Potatoes\_25 (AK), Preamble\_21 (AK), Pterodactyl\_21 (AK), Pumancara\_21 (AK), RAP15\_25 (AK), RcigaStruga\_25 (AK), Rivovina\_21 (AK), Riverdale\_25 (AK), Rozby\_25 (AK), Savage2526\_25 (AK), Scuttle\_25 (AK), Sergei\_21 (AK), Supakev\_21 (AK), Suppi\_25 (AK), TattModd\_25 (AK), Temper16\_21 (AK), Urla\_21 (AK), Vallejo\_25 (AK), Vulture\_21 (AK), Wawa\_25

(AK), Wayne\_25 (AK), WonderBoy\_21 (AK), Zorro\_25 (AK),

Start 17:

- Found in 3 of 130 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Audell\_24 (FR), LastNadiia\_24 (FR), Makima\_22 (FR),

Start 18:

- Found in 3 of 130 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agamoto\_23 (FR), TMaxx\_21 (FR), TripleC\_24 (FR),

Start 19:

- Found in 5 of 130 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 3 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrayBeast\_22 (FB), Hum25\_23 (FQ), Pigu\_22 (FB), Rooter\_22 (FB), Sarge\_22 (FB),

Start 20:

- Found in 7 of 130 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnabelLee\_21 (FR), CardboardBox\_22 (FR), ChamoyPickle\_22 (FR), ChipsNGuac\_22 (FR), Gerri43\_22 (FR), Neuville\_21 (FR), Roberts\_21 (FR),

Start 21:

- Found in 9 of 130 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 8 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anjali\_20 (FD), Bouclier\_22 (FD), Casab\_26 (FD), Dunamis\_23 (FD), Goodgraces\_21 (FD), Mendel\_22 (FD), Seldom\_25 (FD), Swim\_25 (FD), Tillums\_26 (FD),

Start 24:

- Found in 4 of 130 ( 3.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: ERHickory\_34 (singleton),

### **Summary by clusters:**

There are 7 clusters represented in this pham: FQ, FR, AK, singleton, FB, FD, AY,

Info for manual annotations of cluster AK:

- Start number 16 was manually annotated 84 times for cluster AK.

Info for manual annotations of cluster AY:

- Start number 13 was manually annotated 13 times for cluster AY.

Info for manual annotations of cluster FB:

- Start number 19 was manually annotated 2 times for cluster FB.

Info for manual annotations of cluster FD:

- Start number 21 was manually annotated 8 times for cluster FD.

Info for manual annotations of cluster FQ:

- Start number 19 was manually annotated 1 time for cluster FQ.

Info for manual annotations of cluster FR:

- Start number 17 was manually annotated 1 time for cluster FR.
- Start number 18 was manually annotated 1 time for cluster FR.
- Start number 20 was manually annotated 1 time for cluster FR.

### **Gene Information:**

Gene: Agamoto\_23 Start: 17205, Stop: 18047, Start Num: 18

Candidate Starts for Agamoto\_23:

(Start: 18 @17205 has 1 MA's), (24, 17226), (40, 17391), (47, 17427), (63, 17577), (66, 17640), (77, 17703), (91, 17835),

Gene: Aikyam\_27 Start: 19476, Stop: 20438, Start Num: 13

Candidate Starts for Aikyam\_27:

(10, 19410), (Start: 13 @19476 has 13 MA's), (15, 19497), (33, 19662), (37, 19680), (38, 19686), (44, 19734), (51, 19803), (52, 19812), (54, 19833), (61, 19899), (69, 20004), (70, 20025), (77, 20085), (86, 20160), (95, 20256), (98, 20277),

Gene: Albanese\_25 Start: 20058, Stop: 20894, Start Num: 16

Candidate Starts for Albanese\_25:

(Start: 16 @20058 has 84 MA's), (28, 20124), (36, 20220), (40, 20250), (41, 20253), (43, 20268), (56, 20394), (57, 20397), (58, 20406), (72, 20550), (75, 20559), (80, 20589), (82, 20607), (84, 20640), (85, 20646), (97, 20760), (106, 20832), (110, 20859), (112, 20871),

Gene: Aledel\_21 Start: 18421, Stop: 19260, Start Num: 16

Candidate Starts for Aledel\_21:

(Start: 16 @18421 has 84 MA's), (29, 18517), (43, 18637), (56, 18763), (58, 18775), (72, 18916), (84, 19006), (94, 19111), (106, 19198), (110, 19225),

Gene: Anjali\_20 Start: 15722, Stop: 16366, Start Num: 21

Candidate Starts for Anjali\_20:

(2, 15368), (7, 15509), (11, 15665), (Start: 21 @15722 has 8 MA's), (27, 15773), (32, 15860), (55, 16040), (57, 16052), (76, 16211),

Gene: AnnabelLee\_21 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for AnnabelLee\_21:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: AppleCider\_25 Start: 20046, Stop: 20882, Start Num: 16

Candidate Starts for AppleCider\_25:

(6, 19797), (Start: 16 @20046 has 84 MA's), (40, 20238), (43, 20256), (57, 20385), (58, 20394), (60, 20415), (62, 20424), (71, 20532), (72, 20538), (84, 20628), (85, 20634), (94, 20733), (103, 20805), (110, 20847),

Gene: Audell\_24 Start: 17501, Stop: 18355, Start Num: 17

Candidate Starts for Audell\_24:

(Start: 17 @17501 has 1 MA's), (28, 17567), (31, 17642), (55, 17825), (66, 17945), (77, 18005),

Gene: AustinPowers\_21 Start: 18422, Stop: 19261, Start Num: 16

Candidate Starts for AustinPowers\_21:

(Start: 16 @18422 has 84 MA's), (29, 18518), (43, 18638), (56, 18764), (58, 18776), (72, 18917), (84, 19007), (92, 19091), (94, 19112), (106, 19199), (110, 19226),

Gene: Auxilium\_27 Start: 19466, Stop: 20428, Start Num: 13

Candidate Starts for Auxilium\_27:

(10, 19400), (Start: 13 @19466 has 13 MA's), (15, 19487), (33, 19652), (37, 19670), (38, 19676), (44, 19724), (51, 19793), (52, 19802), (54, 19823), (61, 19889), (69, 19994), (70, 20015), (77, 20075), (86, 20150), (95, 20246), (98, 20267),

Gene: BasketStar\_27 Start: 19520, Stop: 20482, Start Num: 13

Candidate Starts for BasketStar\_27:

(10, 19454), (Start: 13 @19520 has 13 MA's), (15, 19541), (33, 19706), (37, 19724), (38, 19730), (44, 19778), (51, 19847), (52, 19856), (54, 19877), (61, 19943), (69, 20048), (70, 20069), (77, 20129), (86, 20204), (95, 20300), (98, 20321),

Gene: Beethoven\_25 Start: 19983, Stop: 20840, Start Num: 16

Candidate Starts for Beethoven\_25:

(Start: 16 @19983 has 84 MA's), (40, 20175), (41, 20178), (42, 20190), (68, 20439), (71, 20469), (72, 20475), (84, 20565), (85, 20571), (94, 20670), (99, 20727), (102, 20760), (106, 20778), (108, 20784), (110, 20805),

Gene: BenchScraper\_27 Start: 19481, Stop: 20443, Start Num: 13

Candidate Starts for BenchScraper\_27:

(10, 19415), (Start: 13 @19481 has 13 MA's), (15, 19502), (33, 19667), (37, 19685), (38, 19691), (51, 19808), (52, 19817), (54, 19838), (61, 19904), (69, 20009), (70, 20030), (77, 20090), (86, 20165), (95, 20261), (98, 20282),

Gene: Bennie\_21 Start: 18441, Stop: 19298, Start Num: 16

Candidate Starts for Bennie\_21:

(6, 18192), (Start: 16 @18441 has 84 MA's), (40, 18633), (43, 18651), (57, 18780), (62, 18819), (71, 18927), (72, 18933), (84, 19023), (85, 19029), (89, 19074), (99, 19185), (106, 19236), (110, 19263),

Gene: BigMack\_21 Start: 18430, Stop: 19293, Start Num: 16

Candidate Starts for BigMack\_21:

(Start: 16 @18430 has 84 MA's), (40, 18625), (43, 18643), (56, 18769), (57, 18772), (62, 18811), (71, 18919), (72, 18925), (78, 18955), (84, 19015), (85, 19021), (89, 19066), (94, 19120), (99, 19177), (106, 19231), (110, 19258),

Gene: BlueShadow\_27 Start: 19466, Stop: 20428, Start Num: 13

Candidate Starts for BlueShadow\_27:

(10, 19400), (Start: 13 @19466 has 13 MA's), (15, 19487), (33, 19652), (37, 19670), (38, 19676), (44, 19724), (51, 19793), (52, 19802), (54, 19823), (61, 19889), (69, 19994), (70, 20015), (77, 20075), (86,

20150), (95, 20246), (98, 20267),

Gene: Bodacious\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for Bodacious\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (57, 18785), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: Bouclier\_22 Start: 15957, Stop: 16664, Start Num: 21

Candidate Starts for Bouclier\_22:

(Start: 21 @15957 has 8 MA's), (32, 16095), (41, 16146), (43, 16161), (74, 16443), (76, 16455), (81, 16491),

Gene: BrayBeast\_22 Start: 17377, Stop: 18099, Start Num: 19

Candidate Starts for BrayBeast\_22:

(Start: 19 @17377 has 3 MA's), (27, 17431), (31, 17515), (35, 17530), (46, 17593), (65, 17788), (76, 17875), (85, 17950), (88, 17989), (90, 18001),

Gene: BrotherBLo\_25 Start: 19989, Stop: 20846, Start Num: 16

Candidate Starts for BrotherBLo\_25:

(Start: 16 @19989 has 84 MA's), (40, 20181), (41, 20184), (42, 20196), (62, 20367), (68, 20445), (71, 20475), (72, 20481), (84, 20571), (85, 20577), (94, 20676), (99, 20733), (106, 20784), (108, 20790), (110, 20811),

Gene: CallieOMalley\_25 Start: 20046, Stop: 20882, Start Num: 16

Candidate Starts for CallieOMalley\_25:

(6, 19797), (Start: 16 @20046 has 84 MA's), (40, 20238), (43, 20256), (56, 20382), (57, 20385), (58, 20394), (60, 20415), (62, 20424), (71, 20532), (72, 20538), (84, 20628), (85, 20634), (94, 20733), (103, 20805), (110, 20847),

Gene: Canowicakte\_25 Start: 20081, Stop: 20917, Start Num: 16

Candidate Starts for Canowicakte\_25:

(6, 19832), (Start: 16 @20081 has 84 MA's), (40, 20273), (43, 20291), (57, 20420), (58, 20429), (60, 20450), (62, 20459), (71, 20567), (72, 20573), (84, 20663), (85, 20669), (94, 20768), (103, 20840), (110, 20882),

Gene: CardboardBox\_22 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for CardboardBox\_22:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: Carpal\_25 Start: 19990, Stop: 20847, Start Num: 16

Candidate Starts for Carpal\_25:

(Start: 16 @19990 has 84 MA's), (40, 20182), (41, 20185), (42, 20197), (62, 20368), (68, 20446), (71, 20476), (72, 20482), (84, 20572), (85, 20578), (94, 20677), (99, 20734), (102, 20767), (106, 20785), (108, 20791), (110, 20812),

Gene: Casab\_26 Start: 16380, Stop: 17024, Start Num: 21

Candidate Starts for Casab\_26:

(Start: 21 @16380 has 8 MA's), (27, 16431), (31, 16515), (43, 16584), (77, 16872),

Gene: ChamoyPickle\_22 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for ChamoyPickle\_22:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: ChewChew\_21 Start: 18442, Stop: 19305, Start Num: 16

Candidate Starts for ChewChew\_21:

(Start: 16 @18442 has 84 MA's), (40, 18637), (43, 18655), (57, 18784), (62, 18823), (71, 18931), (72, 18937), (78, 18967), (84, 19027), (85, 19033), (89, 19078), (96, 19138), (99, 19189), (106, 19243), (110, 19270),

Gene: ChipsNGuac\_22 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for ChipsNGuac\_22:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: Cholula\_25 Start: 20035, Stop: 20892, Start Num: 16

Candidate Starts for Cholula\_25:

(Start: 16 @20035 has 84 MA's), (40, 20227), (41, 20230), (42, 20242), (62, 20413), (68, 20491), (71, 20521), (72, 20527), (84, 20617), (85, 20623), (94, 20722), (99, 20779), (105, 20827), (106, 20830), (108, 20836), (110, 20857),

Gene: Chridison\_21 Start: 18422, Stop: 19261, Start Num: 16

Candidate Starts for Chridison\_21:

(Start: 16 @18422 has 84 MA's), (29, 18518), (43, 18638), (56, 18764), (58, 18776), (72, 18917), (84, 19007), (94, 19112), (106, 19199), (110, 19226),

Gene: Christian\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for Christian\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (56, 18782), (57, 18785), (58, 18794), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: CookieBear\_27 Start: 19466, Stop: 20428, Start Num: 13

Candidate Starts for CookieBear\_27:

(10, 19400), (Start: 13 @19466 has 13 MA's), (15, 19487), (33, 19652), (37, 19670), (38, 19676), (44, 19724), (51, 19793), (52, 19802), (54, 19823), (61, 19889), (69, 19994), (70, 20015), (77, 20075), (86, 20150), (95, 20246), (98, 20267),

Gene: CristinaYang\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for CristinaYang\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (57, 18785), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: Daiboju\_21 Start: 18436, Stop: 19278, Start Num: 16

Candidate Starts for Daiboju\_21:

(3, 18094), (6, 18187), (Start: 16 @18436 has 84 MA's), (43, 18652), (72, 18931), (82, 18988), (84, 19021), (85, 19027), (94, 19126), (98, 19150), (101, 19183), (106, 19216), (110, 19243),

Gene: Dino\_25 Start: 19988, Stop: 20845, Start Num: 16

Candidate Starts for Dino\_25:

(Start: 16 @19988 has 84 MA's), (40, 20180), (41, 20183), (42, 20195), (43, 20198), (62, 20366), (68, 20444), (71, 20474), (72, 20480), (84, 20570), (85, 20576), (94, 20675), (99, 20732), (106, 20783), (108, 20789), (110, 20810),

Gene: DrRobert\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for DrRobert\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (56, 18782), (57, 18785), (58, 18794), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: DreamTeam\_21 Start: 18481, Stop: 19338, Start Num: 16

Candidate Starts for DreamTeam\_21:

(6, 18232), (Start: 16 @18481 has 84 MA's), (40, 18673), (43, 18691), (56, 18817), (57, 18820), (58, 18829), (60, 18850), (62, 18859), (71, 18967), (72, 18973), (78, 19003), (84, 19063), (85, 19069), (89, 19114), (99, 19225), (110, 19303),

Gene: Dunamis\_23 Start: 15879, Stop: 16523, Start Num: 21

Candidate Starts for Dunamis\_23:

(12, 15831), (Start: 21 @15879 has 8 MA's), (27, 15930), (31, 16014), (32, 16017), (43, 16080), (55, 16197), (57, 16209), (76, 16368),

Gene: ERHickory\_34 Start: 15779, Stop: 16372, Start Num: 24

Candidate Starts for ERHickory\_34:

(1, 15323), (24, 15779), (30, 15854), (31, 15896), (40, 15941), (45, 15968), (49, 16013), (55, 16076), (56, 16085), (57, 16088), (67, 16199), (79, 16280), (81, 16298),

Gene: EstebanJulior\_21 Start: 18446, Stop: 19306, Start Num: 16

Candidate Starts for EstebanJulior\_21:

(6, 18197), (Start: 16 @18446 has 84 MA's), (26, 18500), (36, 18608), (41, 18641), (42, 18653), (43, 18656), (57, 18785), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (99, 19190), (106, 19244), (110, 19271),

Gene: Eunoia\_21 Start: 18421, Stop: 19260, Start Num: 16

Candidate Starts for Eunoia\_21:

(Start: 16 @18421 has 84 MA's), (29, 18517), (43, 18637), (56, 18763), (58, 18775), (72, 18916), (84, 19006), (94, 19111), (106, 19198), (110, 19225),

Gene: Fluke\_25 Start: 20031, Stop: 20888, Start Num: 16

Candidate Starts for Fluke\_25:

(Start: 16 @20031 has 84 MA's), (40, 20223), (41, 20226), (42, 20238), (62, 20409), (68, 20487), (71, 20517), (72, 20523), (84, 20613), (85, 20619), (94, 20718), (99, 20775), (102, 20808), (106, 20826), (108, 20832), (110, 20853),

Gene: Gerri43\_22 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for Gerri43\_22:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: Gisselle\_21 Start: 18481, Stop: 19338, Start Num: 16

Candidate Starts for Gisselle\_21:

(6, 18232), (Start: 16 @18481 has 84 MA's), (40, 18673), (43, 18691), (56, 18817), (57, 18820), (58, 18829), (60, 18850), (62, 18859), (71, 18967), (72, 18973), (78, 19003), (84, 19063), (85, 19069), (89, 19114), (99, 19225), (110, 19303),

Gene: Glenn\_25 Start: 20040, Stop: 20897, Start Num: 16

Candidate Starts for Glenn\_25:

(Start: 16 @20040 has 84 MA's), (40, 20232), (41, 20235), (42, 20247), (62, 20418), (68, 20496), (71, 20526), (72, 20532), (84, 20622), (85, 20628), (94, 20727), (99, 20784), (102, 20817), (106, 20835), (108, 20841), (110, 20862),

Gene: Globfish\_27 Start: 19700, Stop: 20662, Start Num: 13

Candidate Starts for Globfish\_27:

(Start: 13 @19700 has 13 MA's), (15, 19721), (25, 19775), (33, 19886), (37, 19904), (38, 19910), (39, 19913), (44, 19958), (52, 20036), (53, 20045), (54, 20057), (61, 20123), (64, 20162), (69, 20228), (70, 20249), (77, 20309), (86, 20384), (95, 20480), (98, 20501),

Gene: Goodgraces\_21 Start: 15936, Stop: 16580, Start Num: 21

Candidate Starts for Goodgraces\_21:

(Start: 21 @15936 has 8 MA's), (27, 15987), (31, 16071), (32, 16074), (43, 16137), (55, 16254), (57, 16266), (76, 16425),

Gene: Graynor\_25 Start: 20067, Stop: 20903, Start Num: 16

Candidate Starts for Graynor\_25:

(6, 19818), (Start: 16 @20067 has 84 MA's), (40, 20259), (43, 20277), (56, 20403), (57, 20406), (58, 20415), (71, 20553), (72, 20559), (84, 20649), (85, 20655), (94, 20754), (103, 20826), (110, 20868),

Gene: GreenHearts\_25 Start: 20150, Stop: 20986, Start Num: 16

Candidate Starts for GreenHearts\_25:

(Start: 16 @20150 has 84 MA's), (28, 20216), (36, 20312), (40, 20342), (41, 20345), (43, 20360), (56, 20486), (57, 20489), (58, 20498), (62, 20528), (72, 20642), (75, 20651), (80, 20681), (82, 20699), (84, 20732), (85, 20738), (97, 20852), (106, 20924), (110, 20951), (112, 20963),

Gene: Greenhouse\_25 Start: 20074, Stop: 20910, Start Num: 16

Candidate Starts for Greenhouse\_25:

(Start: 16 @20074 has 84 MA's), (28, 20140), (36, 20236), (40, 20266), (41, 20269), (43, 20284), (56, 20410), (57, 20413), (58, 20422), (72, 20566), (75, 20575), (80, 20605), (82, 20623), (84, 20656), (85, 20662), (97, 20776), (106, 20848), (110, 20875), (112, 20887),

Gene: HeadNerd\_21 Start: 18441, Stop: 19298, Start Num: 16

Candidate Starts for HeadNerd\_21:

(6, 18192), (Start: 16 @18441 has 84 MA's), (40, 18633), (43, 18651), (57, 18780), (62, 18819), (71, 18927), (72, 18933), (84, 19023), (85, 19029), (89, 19074), (99, 19185), (106, 19236), (110, 19263),

Gene: Herb\_21 Start: 18436, Stop: 19278, Start Num: 16

Candidate Starts for Herb\_21:

(3, 18094), (6, 18187), (Start: 16 @18436 has 84 MA's), (43, 18652), (72, 18931), (82, 18988), (84, 19021), (85, 19027), (94, 19126), (98, 19150), (101, 19183), (106, 19216), (110, 19243),

Gene: Hillester\_27 Start: 19466, Stop: 20428, Start Num: 13

Candidate Starts for Hillester\_27:

(10, 19400), (Start: 13 @19466 has 13 MA's), (15, 19487), (33, 19652), (37, 19670), (38, 19676), (44, 19724), (51, 19793), (52, 19802), (54, 19823), (61, 19889), (69, 19994), (70, 20015), (77, 20075), (86, 20150), (95, 20246), (98, 20267),

Gene: Huckleberry\_21 Start: 18441, Stop: 19298, Start Num: 16

Candidate Starts for Huckleberry\_21:

(6, 18192), (Start: 16 @18441 has 84 MA's), (40, 18633), (43, 18651), (57, 18780), (62, 18819), (71, 18927), (72, 18933), (84, 19023), (85, 19029), (89, 19074), (99, 19185), (106, 19236), (110, 19263),

Gene: Hum25\_23 Start: 17016, Stop: 17738, Start Num: 19

Candidate Starts for Hum25\_23:

(14, 16989), (Start: 19 @17016 has 3 MA's), (28, 17079), (32, 17157), (40, 17202), (46, 17232), (48, 17241), (55, 17337), (65, 17427), (74, 17502), (76, 17514), (81, 17550), (83, 17580), (85, 17592), (90, 17643), (93, 17682),

Gene: HunterDalle\_21 Start: 18421, Stop: 19260, Start Num: 16

Candidate Starts for HunterDalle\_21:

(Start: 16 @18421 has 84 MA's), (29, 18517), (34, 18583), (43, 18637), (56, 18763), (58, 18775), (72, 18916), (84, 19006), (92, 19090), (94, 19111), (106, 19198), (110, 19225),

Gene: Huntingdon\_25 Start: 20042, Stop: 20878, Start Num: 16

Candidate Starts for Huntingdon\_25:

(Start: 16 @20042 has 84 MA's), (40, 20234), (42, 20249), (56, 20378), (57, 20381), (58, 20390), (60, 20411), (62, 20420), (68, 20498), (71, 20528), (72, 20534), (75, 20543), (80, 20573), (84, 20624), (85, 20630), (96, 20735), (98, 20753), (100, 20786), (106, 20816), (110, 20843), (112, 20855),

Gene: Immaculata\_25 Start: 20034, Stop: 20891, Start Num: 16

Candidate Starts for Immaculata\_25:

(Start: 16 @20034 has 84 MA's), (40, 20226), (41, 20229), (42, 20241), (62, 20412), (68, 20490), (71, 20520), (72, 20526), (84, 20616), (85, 20622), (94, 20721), (99, 20778), (105, 20826), (106, 20829), (108, 20835), (110, 20856),

Gene: Joann\_25 Start: 20008, Stop: 20844, Start Num: 16

Candidate Starts for Joann\_25:

(Start: 16 @20008 has 84 MA's), (28, 20074), (36, 20170), (40, 20200), (41, 20203), (42, 20215), (43, 20218), (56, 20344), (57, 20347), (58, 20356), (62, 20386), (72, 20500), (75, 20509), (80, 20539), (82, 20557), (84, 20590), (85, 20596), (97, 20710), (106, 20782), (110, 20809), (112, 20821),

Gene: Jumboset\_25 Start: 19983, Stop: 20840, Start Num: 16

Candidate Starts for Jumboset\_25:

(Start: 16 @19983 has 84 MA's), (40, 20175), (41, 20178), (42, 20190), (62, 20361), (68, 20439), (71, 20469), (72, 20475), (84, 20565), (85, 20571), (94, 20670), (99, 20727), (106, 20778), (108, 20784), (110, 20805),

Gene: Kalizoi\_25 Start: 19982, Stop: 20839, Start Num: 16

Candidate Starts for Kalizoi\_25:

(Start: 16 @19982 has 84 MA's), (40, 20174), (41, 20177), (42, 20189), (43, 20192), (62, 20360), (68, 20438), (71, 20468), (72, 20474), (84, 20564), (85, 20570), (94, 20669), (99, 20726), (106, 20777), (108, 20783), (110, 20804),

Gene: KingBob\_21 Start: 18436, Stop: 19278, Start Num: 16

Candidate Starts for KingBob\_21:

(3, 18094), (6, 18187), (Start: 16 @18436 has 84 MA's), (43, 18652), (72, 18931), (82, 18988), (84, 19021), (85, 19027), (94, 19126), (98, 19150), (101, 19183), (106, 19216), (110, 19243),

Gene: Kittykat\_21 Start: 18465, Stop: 19322, Start Num: 16

Candidate Starts for Kittykat\_21:

(Start: 16 @18465 has 84 MA's), (40, 18657), (43, 18675), (56, 18801), (57, 18804), (62, 18843), (71, 18951), (72, 18957), (78, 18987), (84, 19047), (85, 19053), (89, 19098), (94, 19152), (99, 19209), (106, 19260), (110, 19287),

Gene: Korra\_26 Start: 19988, Stop: 20845, Start Num: 16

Candidate Starts for Korra\_26:

(Start: 16 @19988 has 84 MA's), (40, 20180), (41, 20183), (42, 20195), (62, 20366), (68, 20444), (71, 20474), (72, 20480), (84, 20570), (85, 20576), (94, 20675), (99, 20732), (106, 20783), (108, 20789), (110, 20810),

Gene: Lakshmi\_25 Start: 20034, Stop: 20870, Start Num: 16

Candidate Starts for Lakshmi\_25:

(Start: 16 @20034 has 84 MA's), (28, 20100), (36, 20196), (40, 20226), (41, 20229), (43, 20244), (56, 20370), (57, 20373), (58, 20382), (72, 20526), (75, 20535), (80, 20565), (82, 20583), (84, 20616), (85, 20622), (97, 20736), (106, 20808), (110, 20835), (112, 20847),

Gene: Lasagna\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for Lasagna\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (57, 18785), (58, 18794), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: Lasker\_27 Start: 19474, Stop: 20436, Start Num: 13

Candidate Starts for Lasker\_27:

(10, 19408), (Start: 13 @19474 has 13 MA's), (15, 19495), (33, 19660), (37, 19678), (38, 19684), (44, 19732), (51, 19801), (52, 19810), (54, 19831), (61, 19897), (69, 20002), (70, 20023), (77, 20083), (86, 20158), (95, 20254), (98, 20275),

Gene: LastNadiia\_24 Start: 16453, Stop: 17307, Start Num: 17

Candidate Starts for LastNadiia\_24:

(Start: 17 @16453 has 1 MA's), (28, 16519), (55, 16777), (66, 16897), (77, 16957),

Gene: Lennox\_21 Start: 18431, Stop: 19294, Start Num: 16

Candidate Starts for Lennox\_21:

(Start: 16 @18431 has 84 MA's), (40, 18626), (43, 18644), (57, 18773), (62, 18812), (71, 18920), (72, 18926), (78, 18956), (84, 19016), (85, 19022), (89, 19067), (96, 19127), (99, 19178), (106, 19232), (110, 19259),

Gene: LilStuart\_21 Start: 18431, Stop: 19294, Start Num: 16

Candidate Starts for LilStuart\_21:

(Start: 16 @18431 has 84 MA's), (40, 18626), (43, 18644), (57, 18773), (62, 18812), (71, 18920), (72, 18926), (78, 18956), (84, 19016), (85, 19022), (89, 19067), (96, 19127), (99, 19178), (106, 19232), (110, 19259),

Gene: Litotes\_25 Start: 20031, Stop: 20867, Start Num: 16

Candidate Starts for Litotes\_25:

(6, 19782), (Start: 16 @20031 has 84 MA's), (29, 20121), (40, 20223), (43, 20241), (57, 20370), (58, 20379), (60, 20400), (71, 20517), (72, 20523), (84, 20613), (85, 20619), (94, 20718), (103, 20790), (110, 20832),

Gene: Lucy\_21 Start: 18423, Stop: 19286, Start Num: 16

Candidate Starts for Lucy\_21:

(Start: 16 @18423 has 84 MA's), (40, 18618), (43, 18636), (56, 18762), (57, 18765), (58, 18774), (62, 18804), (71, 18912), (72, 18918), (78, 18948), (84, 19008), (85, 19014), (89, 19059), (96, 19119), (99, 19170), (106, 19224), (110, 19251),

Gene: Makima\_22 Start: 15536, Stop: 16390, Start Num: 17

Candidate Starts for Makima\_22:

(Start: 17 @15536 has 1 MA's), (28, 15602), (55, 15860), (77, 16040), (98, 16220),

Gene: Makoto\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for Makoto\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (56, 18782), (57, 18785), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: MamaPearl\_21 Start: 18446, Stop: 19306, Start Num: 16

Candidate Starts for MamaPearl\_21:

(6, 18197), (Start: 16 @18446 has 84 MA's), (26, 18500), (36, 18608), (41, 18641), (42, 18653), (43, 18656), (57, 18785), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (99, 19190), (106, 19244), (110, 19271),

Gene: Maria1952\_21 Start: 18436, Stop: 19278, Start Num: 16

Candidate Starts for Maria1952\_21:

(3, 18094), (6, 18187), (Start: 16 @18436 has 84 MA's), (43, 18652), (72, 18931), (82, 18988), (84, 19021), (85, 19027), (94, 19126), (98, 19150), (101, 19183), (106, 19216), (110, 19243),

Gene: MaterMagnus\_27 Start: 19476, Stop: 20438, Start Num: 13

Candidate Starts for MaterMagnus\_27:

(10, 19410), (Start: 13 @19476 has 13 MA's), (15, 19497), (33, 19662), (37, 19680), (38, 19686), (44, 19734), (51, 19803), (52, 19812), (54, 19833), (61, 19899), (69, 20004), (70, 20025), (77, 20085), (86, 20160), (95, 20256), (98, 20277),

Gene: MeganNoll\_25 Start: 20040, Stop: 20897, Start Num: 16

Candidate Starts for MeganNoll\_25:

(Start: 16 @20040 has 84 MA's), (40, 20232), (41, 20235), (42, 20247), (62, 20418), (68, 20496), (71, 20526), (72, 20532), (84, 20622), (85, 20628), (94, 20727), (99, 20784), (106, 20835), (108, 20841), (110, 20862),

Gene: Mendel\_22 Start: 15637, Stop: 16281, Start Num: 21

Candidate Starts for Mendel\_22:

(12, 15589), (Start: 21 @15637 has 8 MA's), (27, 15688), (32, 15775), (55, 15955), (57, 15967), (76, 16126),

Gene: MidnightRain\_27 Start: 19465, Stop: 20427, Start Num: 13

Candidate Starts for MidnightRain\_27:

(10, 19399), (Start: 13 @19465 has 13 MA's), (15, 19486), (33, 19651), (37, 19669), (38, 19675), (44, 19723), (51, 19792), (52, 19801), (54, 19822), (61, 19888), (69, 19993), (70, 20014), (77, 20074), (86, 20149), (95, 20245), (98, 20266),

Gene: Misaeng\_25 Start: 20124, Stop: 20981, Start Num: 16

Candidate Starts for Misaeng\_25:

(Start: 16 @20124 has 84 MA's), (28, 20190), (36, 20286), (40, 20316), (42, 20331), (56, 20460), (57, 20463), (58, 20472), (62, 20502), (71, 20610), (72, 20616), (78, 20646), (80, 20655), (84, 20706), (85, 20712), (87, 20733), (89, 20757), (97, 20826), (99, 20868), (104, 20916), (106, 20919), (110, 20946), (112, 20958),

Gene: Moki\_21 Start: 18441, Stop: 19298, Start Num: 16

Candidate Starts for Moki\_21:

(6, 18192), (Start: 16 @18441 has 84 MA's), (40, 18633), (43, 18651), (57, 18780), (62, 18819), (71, 18927), (72, 18933), (84, 19023), (85, 19029), (89, 19074), (99, 19185), (106, 19236), (110, 19263),

Gene: MrBoss\_25 Start: 20031, Stop: 20867, Start Num: 16

Candidate Starts for MrBoss\_25:

(8, 19911), (Start: 16 @20031 has 84 MA's), (23, 20049), (40, 20223), (43, 20241), (56, 20367), (57, 20370), (58, 20379), (71, 20517), (72, 20523), (84, 20613), (85, 20619), (94, 20718), (103, 20790), (110, 20832),

Gene: MrGloopy\_25 Start: 19974, Stop: 20831, Start Num: 16

Candidate Starts for MrGloopy\_25:

(Start: 16 @19974 has 84 MA's), (40, 20166), (41, 20169), (42, 20181), (62, 20352), (68, 20430), (71, 20460), (72, 20466), (84, 20556), (85, 20562), (94, 20661), (99, 20718), (106, 20769), (108, 20775), (110, 20796),

Gene: Nancia\_21 Start: 18443, Stop: 19306, Start Num: 16

Candidate Starts for Nancia\_21:

(Start: 16 @18443 has 84 MA's), (40, 18638), (43, 18656), (57, 18785), (62, 18824), (71, 18932), (72, 18938), (78, 18968), (84, 19028), (85, 19034), (89, 19079), (96, 19139), (99, 19190), (106, 19244), (110, 19271),

Gene: Neuville\_21 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for Neuville\_21:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: Nubia\_25 Start: 19994, Stop: 20830, Start Num: 16

Candidate Starts for Nubia\_25:

(Start: 16 @19994 has 84 MA's), (28, 20060), (36, 20156), (40, 20186), (41, 20189), (43, 20204), (56, 20330), (57, 20333), (58, 20342), (62, 20372), (72, 20486), (75, 20495), (80, 20525), (82, 20543), (84, 20576), (85, 20582), (97, 20696), (106, 20768), (110, 20795), (112, 20807),

Gene: OMalley\_21 Start: 18421, Stop: 19260, Start Num: 16

Candidate Starts for OMalley\_21:

(Start: 16 @18421 has 84 MA's), (29, 18517), (43, 18637), (56, 18763), (58, 18775), (72, 18916), (84, 19006), (94, 19111), (106, 19198), (110, 19225),

Gene: OurGirlNessie\_21 Start: 18423, Stop: 19286, Start Num: 16

Candidate Starts for OurGirlNessie\_21:

(Start: 16 @18423 has 84 MA's), (40, 18618), (43, 18636), (56, 18762), (57, 18765), (58, 18774), (62, 18804), (71, 18912), (72, 18918), (78, 18948), (84, 19008), (85, 19014), (89, 19059), (96, 19119), (99, 19170), (106, 19224), (110, 19251),

Gene: Oxynfrius\_25 Start: 20007, Stop: 20843, Start Num: 16

Candidate Starts for Oxynfrius\_25:

(Start: 16 @20007 has 84 MA's), (28, 20073), (36, 20169), (40, 20199), (41, 20202), (43, 20217), (56, 20343), (57, 20346), (58, 20355), (62, 20385), (72, 20499), (75, 20508), (80, 20538), (82, 20556), (84, 20589), (85, 20595), (97, 20709), (106, 20781), (110, 20808), (112, 20820),

Gene: PartyCup\_25 Start: 20078, Stop: 20914, Start Num: 16

Candidate Starts for PartyCup\_25:

(6, 19829), (Start: 16 @20078 has 84 MA's), (40, 20270), (43, 20288), (56, 20414), (57, 20417), (58, 20426), (60, 20447), (62, 20456), (71, 20564), (72, 20570), (84, 20660), (85, 20666), (94, 20765), (103, 20837), (110, 20879),

Gene: Pigu\_22 Start: 17033, Stop: 17926, Start Num: 19

Candidate Starts for Pigu\_22:

(9, 16931), (Start: 19 @17033 has 3 MA's), (27, 17087), (28, 17096), (30, 17129), (31, 17171), (32, 17174), (46, 17249), (65, 17444), (66, 17471), (77, 17537), (107, 17822), (114, 17894),

Gene: PinkFriday\_21 Start: 18457, Stop: 19320, Start Num: 16

Candidate Starts for PinkFriday\_21:

(Start: 16 @18457 has 84 MA's), (43, 18673), (72, 18952), (78, 18982), (82, 19009), (84, 19042), (85, 19048), (89, 19093), (94, 19147), (99, 19204), (106, 19258), (110, 19285),

Gene: PitaDog\_21 Start: 18434, Stop: 19297, Start Num: 16

Candidate Starts for PitaDog\_21:

(Start: 16 @18434 has 84 MA's), (40, 18629), (43, 18647), (56, 18773), (57, 18776), (58, 18785), (62, 18815), (71, 18923), (72, 18929), (78, 18959), (84, 19019), (85, 19025), (89, 19070), (96, 19130), (99, 19181), (106, 19235), (110, 19262),

Gene: Potatoes\_25 Start: 20035, Stop: 20892, Start Num: 16

Candidate Starts for Potatoes\_25:

(Start: 16 @20035 has 84 MA's), (40, 20227), (41, 20230), (42, 20242), (62, 20413), (68, 20491), (71, 20521), (72, 20527), (84, 20617), (85, 20623), (94, 20722), (99, 20779), (105, 20827), (106, 20830), (108, 20836), (110, 20857),

Gene: Preamble\_21 Start: 18442, Stop: 19299, Start Num: 16

Candidate Starts for Preamble\_21:

(Start: 16 @18442 has 84 MA's), (40, 18634), (43, 18652), (56, 18778), (57, 18781), (62, 18820), (71, 18928), (72, 18934), (78, 18964), (84, 19024), (85, 19030), (89, 19075), (94, 19129), (99, 19186), (106, 19237), (110, 19264),

Gene: Pterodactyl\_21 Start: 18424, Stop: 19287, Start Num: 16

Candidate Starts for Pterodactyl\_21:

(Start: 16 @18424 has 84 MA's), (40, 18619), (43, 18637), (56, 18763), (57, 18766), (62, 18805), (71, 18913), (72, 18919), (78, 18949), (84, 19009), (85, 19015), (89, 19060), (96, 19120), (99, 19171), (106, 19225), (110, 19252),

Gene: Pumancara\_21 Start: 18439, Stop: 19302, Start Num: 16

Candidate Starts for Pumancara\_21:

(Start: 16 @18439 has 84 MA's), (43, 18655), (72, 18934), (78, 18964), (82, 18991), (84, 19024), (85, 19030), (89, 19075), (94, 19129), (99, 19186), (106, 19240), (110, 19267),

Gene: RAP15\_25 Start: 20040, Stop: 20897, Start Num: 16

Candidate Starts for RAP15\_25:

(Start: 16 @20040 has 84 MA's), (40, 20232), (41, 20235), (42, 20247), (62, 20418), (68, 20496), (71, 20526), (72, 20532), (84, 20622), (85, 20628), (94, 20727), (99, 20784), (106, 20835), (108, 20841), (110, 20862),

Gene: RadFad\_27 Start: 19466, Stop: 20428, Start Num: 13

Candidate Starts for RadFad\_27:

(10, 19400), (Start: 13 @19466 has 13 MA's), (15, 19487), (33, 19652), (37, 19670), (38, 19676), (44, 19724), (51, 19793), (52, 19802), (54, 19823), (61, 19889), (69, 19994), (70, 20015), (77, 20075), (86, 20150), (95, 20246), (98, 20267),

Gene: RcigaStruga\_25 Start: 20042, Stop: 20878, Start Num: 16

Candidate Starts for RcigaStruga\_25:

(Start: 16 @20042 has 84 MA's), (40, 20234), (42, 20249), (56, 20378), (57, 20381), (58, 20390), (60, 20411), (62, 20420), (68, 20498), (71, 20528), (72, 20534), (75, 20543), (80, 20573), (84, 20624), (85, 20630), (96, 20735), (98, 20753), (100, 20786), (106, 20816), (110, 20843), (112, 20855),

Gene: Richie\_27 Start: 19481, Stop: 20443, Start Num: 13

Candidate Starts for Richie\_27:

(10, 19415), (Start: 13 @19481 has 13 MA's), (15, 19502), (33, 19667), (37, 19685), (38, 19691), (44, 19739), (51, 19808), (52, 19817), (54, 19838), (61, 19904), (69, 20009), (70, 20030), (77, 20090), (86, 20165), (95, 20261), (98, 20282),

Gene: Riovina\_21 Start: 18421, Stop: 19260, Start Num: 16

Candidate Starts for Riovina\_21:

(Start: 16 @18421 has 84 MA's), (29, 18517), (43, 18637), (56, 18763), (58, 18775), (72, 18916), (84, 19006), (94, 19111), (106, 19198), (110, 19225),

Gene: Riverdale\_25 Start: 19970, Stop: 20827, Start Num: 16

Candidate Starts for Riverdale\_25:

(Start: 16 @19970 has 84 MA's), (40, 20162), (41, 20165), (42, 20177), (68, 20426), (71, 20456), (72, 20462), (84, 20552), (85, 20558), (94, 20657), (99, 20714), (102, 20747), (106, 20765), (108, 20771), (110, 20792),

Gene: Roberts\_21 Start: 14177, Stop: 15061, Start Num: 20

Candidate Starts for Roberts\_21:

(Start: 20 @14177 has 1 MA's), (47, 14399), (59, 14525), (63, 14549), (65, 14585), (66, 14612), (73, 14663), (111, 15017),

Gene: Rooter\_22 Start: 16912, Stop: 17634, Start Num: 19

Candidate Starts for Rooter\_22:

(Start: 19 @16912 has 3 MA's), (27, 16966), (31, 17050), (35, 17065), (46, 17128), (65, 17323), (76, 17410), (85, 17485), (88, 17524), (90, 17536),

Gene: Rozby\_25 Start: 19971, Stop: 20828, Start Num: 16

Candidate Starts for Rozby\_25:

(Start: 16 @19971 has 84 MA's), (40, 20163), (41, 20166), (42, 20178), (68, 20427), (71, 20457), (72, 20463), (84, 20553), (85, 20559), (94, 20658), (99, 20715), (102, 20748), (106, 20766), (108, 20772), (110, 20793),

Gene: Sarge\_22 Start: 17291, Stop: 18013, Start Num: 19

Candidate Starts for Sarge\_22:

(Start: 19 @17291 has 3 MA's), (27, 17345), (31, 17429), (35, 17444), (46, 17507), (65, 17702), (76, 17789), (85, 17864), (88, 17903), (90, 17915),

Gene: Savage2526\_25 Start: 20034, Stop: 20891, Start Num: 16

Candidate Starts for Savage2526\_25:

(Start: 16 @20034 has 84 MA's), (40, 20226), (41, 20229), (42, 20241), (62, 20412), (68, 20490), (71, 20520), (72, 20526), (84, 20616), (85, 20622), (94, 20721), (99, 20778), (106, 20829), (108, 20835), (110, 20856),

Gene: Scuttle\_25 Start: 20039, Stop: 20896, Start Num: 16

Candidate Starts for Scuttle\_25:

(Start: 16 @20039 has 84 MA's), (40, 20231), (41, 20234), (42, 20246), (62, 20417), (68, 20495), (71, 20525), (72, 20531), (84, 20621), (85, 20627), (94, 20726), (99, 20783), (106, 20834), (108, 20840), (110, 20861),

Gene: Seldom\_25 Start: 16263, Stop: 16907, Start Num: 21

Candidate Starts for Seldom\_25:

(12, 16215), (Start: 21 @16263 has 8 MA's), (27, 16314), (31, 16398), (32, 16401), (43, 16464), (55, 16581), (57, 16593), (76, 16752),

Gene: Sergei\_21 Start: 18436, Stop: 19278, Start Num: 16

Candidate Starts for Sergei\_21:

(3, 18094), (6, 18187), (Start: 16 @18436 has 84 MA's), (43, 18652), (72, 18931), (82, 18988), (84, 19021), (85, 19027), (94, 19126), (98, 19150), (101, 19183), (106, 19216), (110, 19243),

Gene: SpicyFrank\_27 Start: 19701, Stop: 20663, Start Num: 13

Candidate Starts for SpicyFrank\_27:

(Start: 13 @19701 has 13 MA's), (15, 19722), (25, 19776), (33, 19887), (37, 19905), (38, 19911), (44, 19959), (52, 20037), (54, 20058), (61, 20124), (69, 20229), (70, 20250), (77, 20310), (86, 20385), (95, 20481), (96, 20484), (98, 20502), (111, 20619),

Gene: Supakev\_21 Start: 18423, Stop: 19262, Start Num: 16

Candidate Starts for Supakev\_21:

(Start: 16 @18423 has 84 MA's), (29, 18519), (43, 18639), (56, 18765), (58, 18777), (72, 18918), (84, 19008), (94, 19113), (106, 19200), (110, 19227),

Gene: Suppi\_25 Start: 20081, Stop: 20917, Start Num: 16

Candidate Starts for Suppi\_25:

(6, 19832), (Start: 16 @20081 has 84 MA's), (40, 20273), (43, 20291), (57, 20420), (58, 20429), (60, 20450), (62, 20459), (71, 20567), (72, 20573), (84, 20663), (85, 20669), (94, 20768), (103, 20840), (110, 20882),

Gene: Swim\_25 Start: 16136, Stop: 16780, Start Num: 21

Candidate Starts for Swim\_25:

(12, 16088), (Start: 21 @16136 has 8 MA's), (27, 16187), (31, 16271), (32, 16274), (43, 16337), (55, 16454), (57, 16466), (76, 16625),

Gene: TMaxx\_21 Start: 14021, Stop: 14869, Start Num: 18

Candidate Starts for TMaxx\_21:

(Start: 18 @14021 has 1 MA's), (24, 14042), (40, 14210), (47, 14246), (50, 14291), (55, 14339), (63, 14396), (66, 14459), (77, 14525), (109, 14813), (113, 14834),

Gene: TattModd\_25 Start: 20033, Stop: 20890, Start Num: 16

Candidate Starts for TattModd\_25:

(Start: 16 @20033 has 84 MA's), (40, 20225), (41, 20228), (42, 20240), (62, 20411), (68, 20489), (71, 20519), (72, 20525), (84, 20615), (85, 20621), (94, 20720), (99, 20777), (102, 20810), (106, 20828), (108, 20834), (110, 20855),

Gene: Temper16\_21 Start: 18436, Stop: 19278, Start Num: 16

Candidate Starts for Temper16\_21:

(3, 18094), (6, 18187), (Start: 16 @18436 has 84 MA's), (43, 18652), (72, 18931), (82, 18988), (84, 19021), (85, 19027), (94, 19126), (98, 19150), (101, 19183), (106, 19216), (110, 19243),

Gene: Tillums\_26 Start: 16278, Stop: 16925, Start Num: 21

Candidate Starts for Tillums\_26:

(2, 15915), (4, 15957), (5, 15966), (7, 16056), (11, 16221), (Start: 21 @16278 has 8 MA's), (27, 16329), (31, 16413), (32, 16416), (55, 16596), (57, 16608), (76, 16770),

Gene: TripleC\_24 Start: 17518, Stop: 18363, Start Num: 18

Candidate Starts for TripleC\_24:

(Start: 18 @17518 has 1 MA's), (24, 17539), (47, 17740), (63, 17890), (66, 17953), (77, 18019),

Gene: Urla\_21 Start: 18448, Stop: 19308, Start Num: 16

Candidate Starts for Urla\_21:

(6, 18199), (Start: 16 @18448 has 84 MA's), (26, 18502), (36, 18610), (40, 18640), (41, 18643), (42, 18655), (43, 18658), (57, 18787), (62, 18826), (71, 18934), (72, 18940), (78, 18970), (84, 19030), (85, 19036), (89, 19081), (99, 19192), (106, 19246), (110, 19273),

Gene: Vallejo\_25 Start: 19972, Stop: 20829, Start Num: 16

Candidate Starts for Vallejo\_25:

(Start: 16 @19972 has 84 MA's), (40, 20164), (41, 20167), (42, 20179), (62, 20350), (68, 20428), (71, 20458), (72, 20464), (84, 20554), (85, 20560), (94, 20659), (99, 20716), (102, 20749), (106, 20767), (108, 20773), (110, 20794),

Gene: Vulture\_21 Start: 18421, Stop: 19260, Start Num: 16

Candidate Starts for Vulture\_21:

(Start: 16 @18421 has 84 MA's), (29, 18517), (34, 18583), (43, 18637), (56, 18763), (58, 18775), (72, 18916), (84, 19006), (92, 19090), (94, 19111), (106, 19198), (110, 19225),

Gene: Wawa\_25 Start: 20009, Stop: 20866, Start Num: 16

Candidate Starts for Wawa\_25:

(Start: 16 @20009 has 84 MA's), (22, 20021), (40, 20201), (41, 20204), (42, 20216), (68, 20465), (71, 20495), (72, 20501), (84, 20591), (85, 20597), (94, 20696), (99, 20753), (102, 20786), (106, 20804), (108, 20810), (110, 20831),

Gene: Wayne\_25 Start: 20127, Stop: 20963, Start Num: 16

Candidate Starts for Wayne\_25:

(6, 19878), (Start: 16 @20127 has 84 MA's), (40, 20319), (43, 20337), (56, 20463), (57, 20466), (58, 20475), (60, 20496), (62, 20505), (71, 20613), (72, 20619), (84, 20709), (85, 20715), (94, 20814), (103, 20886), (110, 20928),

Gene: Windest\_28 Start: 19531, Stop: 20493, Start Num: 13

Candidate Starts for Windest\_28:

(10, 19465), (Start: 13 @19531 has 13 MA's), (15, 19552), (33, 19717), (37, 19735), (38, 19741), (44, 19789), (51, 19858), (52, 19867), (54, 19888), (61, 19954), (69, 20059), (70, 20080), (77, 20140), (86, 20215), (95, 20311), (98, 20332),

Gene: WonderBoy\_21 Start: 18424, Stop: 19287, Start Num: 16

Candidate Starts for WonderBoy\_21:

(Start: 16 @18424 has 84 MA's), (40, 18619), (43, 18637), (56, 18763), (57, 18766), (62, 18805), (71, 18913), (72, 18919), (78, 18949), (84, 19009), (85, 19015), (89, 19060), (99, 19171), (106, 19225), (110, 19252),

Gene: YoungHarleezy\_27 Start: 19479, Stop: 20441, Start Num: 13

Candidate Starts for YoungHarleezy\_27:

(10, 19413), (Start: 13 @19479 has 13 MA's), (15, 19500), (33, 19665), (37, 19683), (38, 19689), (44, 19737), (51, 19806), (52, 19815), (54, 19836), (61, 19902), (69, 20007), (70, 20028), (77, 20088), (86, 20163), (95, 20259), (98, 20280),

Gene: Zorro\_25 Start: 19988, Stop: 20845, Start Num: 16

Candidate Starts for Zorro\_25:

(Start: 16 @19988 has 84 MA's), (40, 20180), (41, 20183), (42, 20195), (43, 20198), (62, 20366), (68, 20444), (71, 20474), (72, 20480), (84, 20570), (85, 20576), (94, 20675), (99, 20732), (106, 20783), (108, 20789), (110, 20810),