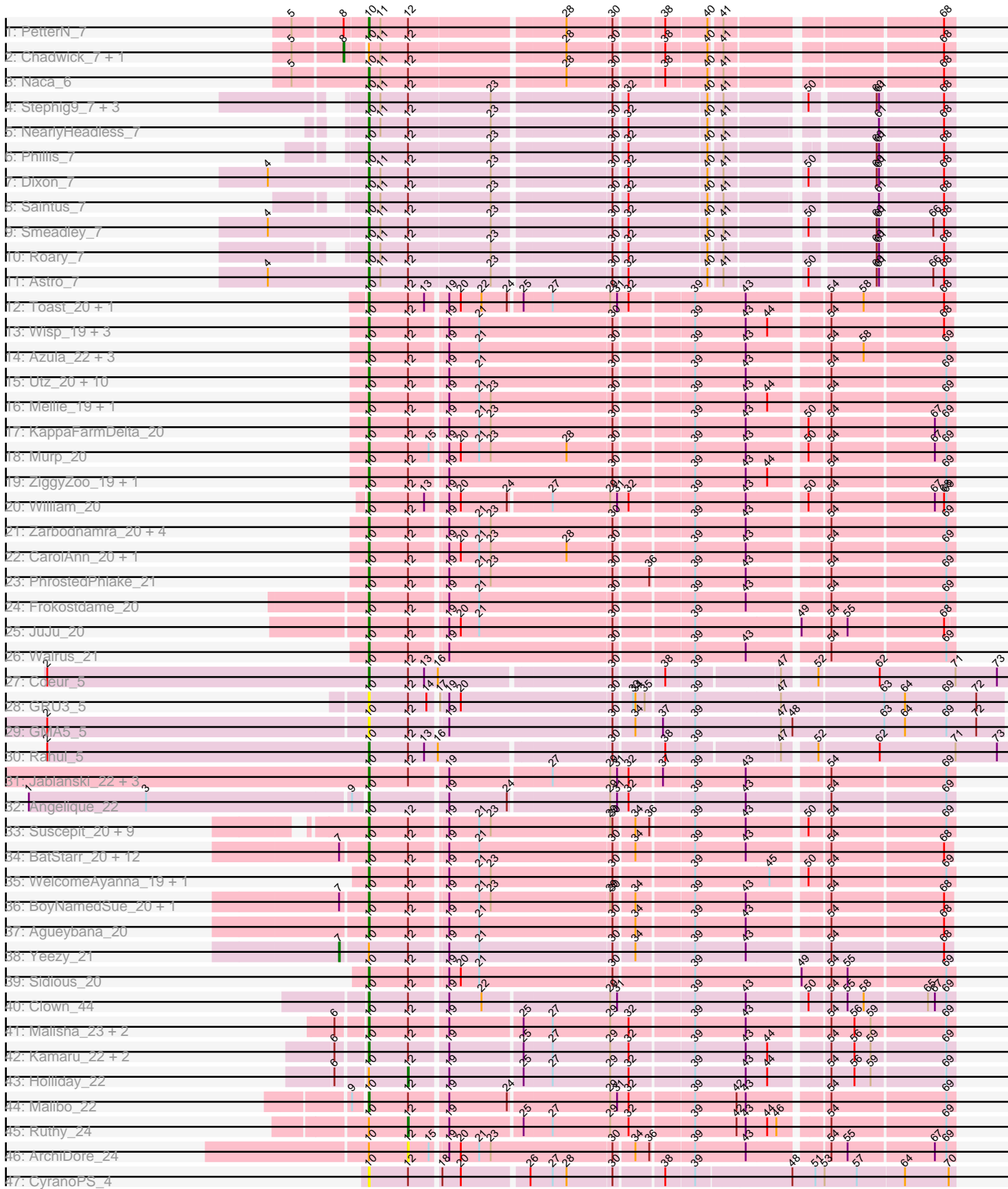


Pham 224448



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 224448 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224448 has 105 members, 6 are drafts.

Phages represented in each track:

- Track 1 : PetterN_7
- Track 2 : Chadwick_7, Scorpia_7
- Track 3 : Naca_6
- Track 4 : Stephig9_7, Expelliarmus_6, Danforth_6, Groundhog_6
- Track 5 : NearlyHeadless_7
- Track 6 : Phillis_7
- Track 7 : Dixon_7
- Track 8 : Saintus_7
- Track 9 : Smeadley_7
- Track 10 : Roary_7
- Track 11 : Astro_7
- Track 12 : Toast_20, PCoral7_20
- Track 13 : Wisp_19, CaptainKirk2_20, UmaThurman_20, Delian_20
- Track 14 : Azula_22, Gambino_22, MissRona_22, Blueberry_22
- Track 15 : Utz_20, BlingBling_20, Malachai_21, JasperJr_20, Archis_21, Fenry_19, Begonia_21, Guacamole_20, Melba_20, Barco_20, MintFen_20
- Track 16 : Mellie_19, Pipp_20
- Track 17 : KappaFarmDelta_20
- Track 18 : Murp_20
- Track 19 : ZiggyZoo_19, Obliviate_19
- Track 20 : William_20
- Track 21 : Zarbodnamra_20, Jalammah_22, Hitter_20, Lysidious_21, Samba_20
- Track 22 : CarolAnn_20, Blino_20
- Track 23 : PhrostedPhlake_21
- Track 24 : Frokostdame_20
- Track 25 : JuJu_20
- Track 26 : Walrus_21
- Track 27 : Coeur_5
- Track 28 : GRU3_5
- Track 29 : GMA5_5
- Track 30 : Rahul_5
- Track 31 : Jablanski_22, Posh_22, Pytheas_22, Wrigley_22
- Track 32 : Angelique_22
- Track 33 : Suscepit_20, Tayonia_20, Zameen_20, Manasvini_20, Neobush_20, Antonio_20, Maridalia_19, Eudoria_20, Trumpet_20, Kita_20
- Track 34 : BatStarr_20, Bialota_20, Nymphadora_20, TimTam_20, Bosnia_20, Zirinka_20, PantheRoc_20, BaxterFox_19, Madeline_20, Hugley_20, Herod_20,

Ohgeesy_20, Eviarto_20

- Track 35 : WelcomeAyanna_19, ThankyouJordi_19
- Track 36 : BoyNamedSue_20, AlumE_20
- Track 37 : Agueybana_20
- Track 38 : Yeezy_21
- Track 39 : Sidious_20
- Track 40 : Clown_44
- Track 41 : Malisha_23, Squiddly_24, Spooky_22
- Track 42 : Kamaru_22, Budski_22, Whitney_23
- Track 43 : Holliday_22
- Track 44 : Malibo_22
- Track 45 : Ruthy_24
- Track 46 : ArchiDore_24
- Track 47 : CyranoPS_4

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

The start number called the most often in the published annotations is 10, it was called in 94 of the 99 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana_20, AlumE_20, Angelique_22, Antonio_20, Archis_21, Astro_7, Azula_22, Barco_20, BatStarr_20, BaxterFox_19, Begonia_21, Bialota_20, BlingBling_20, Blino_20, Blueberry_22, Bosnia_20, BoyNamedSue_20, Budski_22, CaptainKirk2_20, CarolAnn_20, Clown_44, Coeur_5, CyranoPS_4, Danforth_6, Delian_20, Dixon_7, Eudoria_20, Eviarto_20, Expelliarmus_6, Fenry_19, Frokostdame_20, GMA5_5, GRU3_5, Gambino_22, Groundhog_6, Guacamole_20, Herod_20, Hitter_20, Hugley_20, Jablanski_22, Jalammah_22, JasperJr_20, JuJu_20, Kamaru_22, KappaFarmDelta_20, Kita_20, Lysidious_21, Madeline_20, Malachai_21, Malibo_22, Malisha_23, Manasvini_20, Maridalia_19, Melba_20, Mellie_19, MintFen_20, MissRona_22, Murp_20, Naca_6, NearlyHeadless_7, Neobush_20, Nymphadora_20, Obliviate_19, Ohgeesy_20, PCoral7_20, PantheRoc_20, PetterN_7, Phillis_7, PhrostedPhlake_21, Pipp_20, Posh_22, Pytheas_22, Rahul_5, Roary_7, Saintus_7, Samba_20, Sidious_20, Smeadley_7, Spooky_22, Squiddly_24, Stephig9_7, Suscepit_20, Tayonia_20, ThankyouJordi_19, TimTam_20, Toast_20, Trumpet_20, UmaThurman_20, Utz_20, Walrus_21, WelcomeAyanna_19, Whitney_23, William_20, Wisp_19, Wrigley_22, Zameen_20, Zarbodnamra_20, ZiggyZoo_19, Zirinka_20,

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

- ArchiDore_24, Chadwick_7, Holliday_22, Ruthy_24, Scorpia_7, Yeezy_21,

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

-

Summary by start number:

Start 7:

- Found in 16 of 105 (15.2%) of genes in pham
- Manual Annotations of this start: 1 of 99

- Called 6.2% of time when present
- Phage (with cluster) where this start called: Yeezy_21 (CZ3),

Start 8:

- Found in 3 of 105 (2.9%) of genes in pham
- Manual Annotations of this start: 2 of 99
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Chadwick_7 (A5), Scorpia_7 (A5),

Start 10:

- Found in 105 of 105 (100.0%) of genes in pham
- Manual Annotations of this start: 94 of 99
- Called 94.3% of time when present
- Phage (with cluster) where this start called: Agueybana_20 (CZ1), AlumE_20 (CZ1), Angelique_22 (CY1), Antonio_20 (CZ1), Archis_21 (CV), Astro_7 (A8), Azula_22 (CV), Barco_20 (CV), BatStarr_20 (CZ1), BaxterFox_19 (CZ3), Begonia_21 (CV), Bialota_20 (CZ1), BlingBling_20 (CV), Blino_20 (CV), Blueberry_22 (CV), Bosnia_20 (CZ1), BoyNamedSue_20 (CZ1), Budski_22 (DN), CaptainKirk2_20 (CV), CarolAnn_20 (CV), Clown_44 (DC2), Coeur_5 (CW2), CyranoPS_4 (singleton), Danforth_6 (A8), Delian_20 (CV), Dixon_7 (A8), Eudoria_20 (CZ1), Eviarto_20 (CZ1), Expelliarmus_6 (A8), Fenry_19 (CV), Frokostdame_20 (CV), GMA5_5 (CW2), GRU3_5 (CW2), Gambino_22 (CV), Groundhog_6 (A8), Guacamole_20 (CV), Herod_20 (CZ1), Hitter_20 (CV), Hugley_20 (CZ1), Jablanski_22 (CY), Jalammah_22 (CV), JasperJr_20 (CV), JuJu_20 (CV), Kamaru_22 (DN1), KappaFarmDelta_20 (CV), Kita_20 (CZ1), Lysidious_21 (CV), Madeline_20 (CZ1), Malachai_21 (CV), Malibo_22 (DW), Malisha_23 (DN), Manasvini_20 (CZ1), Maridalia_19 (CZ1), Melba_20 (CV), Mellie_19 (CV), MintFen_20 (CV), MissRona_22 (CV), Murp_20 (CV), Naca_6 (A5), NearlyHeadless_7 (A8), Neobush_20 (CZ1), Nymphadora_20 (CZ1), Obliviate_19 (CV), Ohgeesy_20 (CZ), PCoral7_20 (CV), PantheRoc_20 (CZ3), PetterN_7 (A5), Phillis_7 (A8), PhrostedPhlake_21 (CV), Pipp_20 (CV), Posh_22 (CY), Pytheas_22 (CY), Rahul_5 (CW2), Roary_7 (A8), Saintus_7 (A8), Samba_20 (CV), Sidious_20 (CZ7), Smeadley_7 (A8), Spooky_22 (DN2), Squiddly_24 (DN2), Stephig9_7 (A8), Suscepit_20 (CZ1), Tayonia_20 (CZ1), ThankyouJordi_19 (CZ1), TimTam_20 (CZ1), Toast_20 (CV), Trumpet_20 (CZ1), UmaThurman_20 (CV), Utz_20 (CV), Walrus_21 (CV), WelcomeAyanna_19 (CZ1), Whitney_23 (DN1), William_20 (CV), Wisp_19 (CV), Wrigley_22 (CY), Zameen_20 (CZ1), Zarbodnamra_20 (CV), ZiggyZoo_19 (CV), Zirinka_20 (CZ1),

Start 12:

- Found in 104 of 105 (99.0%) of genes in pham
- Manual Annotations of this start: 2 of 99
- Called 2.9% of time when present
- Phage (with cluster) where this start called: ArchiDore_24 (DW), Holliday_22 (DN1), Ruthy_24 (DW),

Summary by clusters:

There are 16 clusters represented in this pham: DN, CY1, CZ1, CZ, CZ3, CW2, CZ7, DN2, CY, DN1, DW, A8, singleton, A5, DC2, CV,

Info for manual annotations of cluster A5:

- Start number 8 was manually annotated 2 times for cluster A5.
- Start number 10 was manually annotated 2 times for cluster A5.

Info for manual annotations of cluster A8:

- Start number 10 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster CV:

- Start number 10 was manually annotated 38 times for cluster CV.

Info for manual annotations of cluster CW2:

- Start number 10 was manually annotated 2 times for cluster CW2.

Info for manual annotations of cluster CY:

- Start number 10 was manually annotated 4 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 10 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 10 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 10 was manually annotated 24 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

- Start number 7 was manually annotated 1 time for cluster CZ3.
- Start number 10 was manually annotated 2 times for cluster CZ3.

Info for manual annotations of cluster CZ7:

- Start number 10 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DC2:

- Start number 10 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DN:

- Start number 10 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 10 was manually annotated 2 times for cluster DN1.
- Start number 12 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 10 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DW:

- Start number 10 was manually annotated 1 time for cluster DW.
- Start number 12 was manually annotated 1 time for cluster DW.

Gene Information:

Gene: Agueybana_20 Start: 19470, Stop: 20174, Start Num: 10

Candidate Starts for Agueybana_20:

(Start: 10 @19470 has 94 MA's), (Start: 12 @19521 has 2 MA's), (19, 19563), (21, 19599), (30, 19770), (34, 19794), (39, 19863), (43, 19929), (54, 20022), (68, 20163),

Gene: AlumE_20 Start: 19469, Stop: 20173, Start Num: 10

Candidate Starts for AlumE_20:

(Start: 7 @19436 has 1 MA's), (Start: 10 @19469 has 94 MA's), (Start: 12 @19520 has 2 MA's), (19, 19562), (21, 19598), (23, 19613), (29, 19766), (30, 19769), (34, 19793), (39, 19862), (43, 19928), (54, 20021), (68, 20162),

Gene: Angelique_22 Start: 19811, Stop: 20524, Start Num: 10

Candidate Starts for Angelique_22:

(1, 19382), (3, 19535), (9, 19796), (Start: 10 @19811 has 94 MA's), (19, 19907), (24, 19982), (29, 20108), (31, 20117), (32, 20132), (39, 20210), (43, 20276), (54, 20369), (69, 20513),

Gene: Antonio_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Antonio_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: ArchiDore_24 Start: 21649, Stop: 22305, Start Num: 12

Candidate Starts for ArchiDore_24:

(Start: 10 @21598 has 94 MA's), (Start: 12 @21649 has 2 MA's), (15, 21676), (19, 21691), (20, 21703), (21, 21727), (23, 21742), (30, 21898), (34, 21922), (36, 21940), (39, 21991), (43, 22057), (54, 22150), (55, 22171), (67, 22279), (69, 22294),

Gene: Archis_21 Start: 18524, Stop: 19231, Start Num: 10

Candidate Starts for Archis_21:

(Start: 10 @18524 has 94 MA's), (Start: 12 @18575 has 2 MA's), (19, 18617), (21, 18653), (30, 18824), (39, 18917), (43, 18983), (54, 19076), (69, 19220),

Gene: Astro_7 Start: 4196, Stop: 4876, Start Num: 10

Candidate Starts for Astro_7:

(4, 4070), (Start: 10 @4196 has 94 MA's), (11, 4211), (Start: 12 @4247 has 2 MA's), (23, 4352), (30, 4496), (32, 4511), (40, 4610), (41, 4622), (50, 4712), (60, 4787), (61, 4790), (66, 4850), (68, 4862),

Gene: Azula_22 Start: 18628, Stop: 19335, Start Num: 10

Candidate Starts for Azula_22:

(Start: 10 @18628 has 94 MA's), (Start: 12 @18679 has 2 MA's), (19, 18721), (21, 18757), (30, 18928), (39, 19021), (43, 19087), (54, 19180), (58, 19222), (69, 19324),

Gene: Barco_20 Start: 18313, Stop: 19020, Start Num: 10

Candidate Starts for Barco_20:

(Start: 10 @18313 has 94 MA's), (Start: 12 @18364 has 2 MA's), (19, 18406), (21, 18442), (30, 18613), (39, 18706), (43, 18772), (54, 18865), (69, 19009),

Gene: BatStarr_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for BatStarr_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: BaxterFox_19 Start: 18796, Stop: 19500, Start Num: 10

Candidate Starts for BaxterFox_19:

(Start: 7 @18763 has 1 MA's), (Start: 10 @18796 has 94 MA's), (Start: 12 @18847 has 2 MA's), (19, 18889), (21, 18925), (30, 19096), (34, 19120), (39, 19189), (43, 19255), (54, 19348), (68, 19489),

Gene: Begonia_21 Start: 18791, Stop: 19498, Start Num: 10

Candidate Starts for Begonia_21:

(Start: 10 @18791 has 94 MA's), (Start: 12 @18842 has 2 MA's), (19, 18884), (21, 18920), (30, 19091), (39, 19184), (43, 19250), (54, 19343), (69, 19487),

Gene: Bialota_20 Start: 19469, Stop: 20173, Start Num: 10

Candidate Starts for Bialota_20:

(Start: 7 @19436 has 1 MA's), (Start: 10 @19469 has 94 MA's), (Start: 12 @19520 has 2 MA's), (19, 19562), (21, 19598), (30, 19769), (34, 19793), (39, 19862), (43, 19928), (54, 20021), (68, 20162),

Gene: BlingBling_20 Start: 18313, Stop: 19020, Start Num: 10

Candidate Starts for BlingBling_20:

(Start: 10 @18313 has 94 MA's), (Start: 12 @18364 has 2 MA's), (19, 18406), (21, 18442), (30, 18613), (39, 18706), (43, 18772), (54, 18865), (69, 19009),

Gene: Blino_20 Start: 18281, Stop: 18988, Start Num: 10

Candidate Starts for Blino_20:

(Start: 10 @18281 has 94 MA's), (Start: 12 @18332 has 2 MA's), (19, 18374), (20, 18386), (21, 18410), (23, 18425), (28, 18524), (30, 18581), (39, 18674), (43, 18740), (54, 18833), (69, 18977),

Gene: Blueberry_22 Start: 18628, Stop: 19335, Start Num: 10

Candidate Starts for Blueberry_22:

(Start: 10 @18628 has 94 MA's), (Start: 12 @18679 has 2 MA's), (19, 18721), (21, 18757), (30, 18928), (39, 19021), (43, 19087), (54, 19180), (58, 19222), (69, 19324),

Gene: Bosnia_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for Bosnia_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: BoyNamedSue_20 Start: 19469, Stop: 20173, Start Num: 10

Candidate Starts for BoyNamedSue_20:

(Start: 7 @19436 has 1 MA's), (Start: 10 @19469 has 94 MA's), (Start: 12 @19520 has 2 MA's), (19, 19562), (21, 19598), (23, 19613), (29, 19766), (30, 19769), (34, 19793), (39, 19862), (43, 19928), (54, 20021), (68, 20162),

Gene: Budski_22 Start: 18675, Stop: 19385, Start Num: 10

Candidate Starts for Budski_22:

(6, 18642), (Start: 10 @18675 has 94 MA's), (Start: 12 @18726 has 2 MA's), (19, 18771), (25, 18861), (27, 18897), (29, 18972), (32, 18996), (39, 19074), (43, 19140), (44, 19167), (54, 19233), (56, 19263), (59, 19284), (69, 19374),

Gene: CaptainKirk2_20 Start: 18337, Stop: 19041, Start Num: 10

Candidate Starts for CaptainKirk2_20:

(Start: 10 @18337 has 94 MA's), (Start: 12 @18388 has 2 MA's), (19, 18430), (21, 18466), (30, 18637), (39, 18730), (43, 18796), (44, 18823), (54, 18889), (68, 19030),

Gene: CarolAnn_20 Start: 18280, Stop: 18987, Start Num: 10

Candidate Starts for CarolAnn_20:

(Start: 10 @18280 has 94 MA's), (Start: 12 @18331 has 2 MA's), (19, 18373), (20, 18385), (21, 18409), (23, 18424), (28, 18523), (30, 18580), (39, 18673), (43, 18739), (54, 18832), (69, 18976),

Gene: Chadwick_7 Start: 4240, Stop: 4944, Start Num: 8

Candidate Starts for Chadwick_7:

(5, 4180), (Start: 8 @4240 has 2 MA's), (Start: 10 @4264 has 94 MA's), (11, 4279), (Start: 12 @4315 has 2 MA's), (28, 4507), (30, 4564), (38, 4621), (40, 4672), (41, 4684), (68, 4930),

Gene: Clown_44 Start: 35539, Stop: 36252, Start Num: 10

Candidate Starts for Clown_44:

(Start: 10 @35539 has 94 MA's), (Start: 12 @35590 has 2 MA's), (19, 35635), (22, 35677), (29, 35836), (31, 35845), (39, 35938), (43, 36004), (50, 36073), (54, 36097), (55, 36118), (58, 36139), (65, 36217), (67, 36226), (69, 36241),

Gene: Coeur_5 Start: 3259, Stop: 4041, Start Num: 10

Candidate Starts for Coeur_5:

(2, 2839), (Start: 10 @3259 has 94 MA's), (Start: 12 @3310 has 2 MA's), (13, 3331), (16, 3349), (30, 3562), (38, 3619), (39, 3655), (47, 3757), (52, 3793), (62, 3868), (71, 3967), (73, 4021),

Gene: CyranoPS_4 Start: 2898, Stop: 3614, Start Num: 10

Candidate Starts for CyranoPS_4:

(Start: 10 @2898 has 94 MA's), (Start: 12 @2949 has 2 MA's), (18, 2985), (20, 3009), (26, 3090), (27, 3117), (28, 3135), (30, 3192), (38, 3249), (39, 3285), (48, 3405), (51, 3435), (53, 3447), (57, 3489), (64, 3549), (70, 3606),

Gene: Danforth_6 Start: 4175, Stop: 4855, Start Num: 10

Candidate Starts for Danforth_6:

(Start: 10 @4175 has 94 MA's), (11, 4190), (Start: 12 @4226 has 2 MA's), (23, 4331), (30, 4475), (32, 4490), (40, 4589), (41, 4601), (50, 4691), (60, 4766), (61, 4769), (68, 4841),

Gene: Delian_20 Start: 18337, Stop: 19041, Start Num: 10

Candidate Starts for Delian_20:

(Start: 10 @18337 has 94 MA's), (Start: 12 @18388 has 2 MA's), (19, 18430), (21, 18466), (30, 18637), (39, 18730), (43, 18796), (44, 18823), (54, 18889), (68, 19030),

Gene: Dixon_7 Start: 4194, Stop: 4874, Start Num: 10

Candidate Starts for Dixon_7:

(4, 4071), (Start: 10 @4194 has 94 MA's), (11, 4209), (Start: 12 @4245 has 2 MA's), (23, 4350), (30, 4494), (32, 4509), (40, 4608), (41, 4620), (50, 4710), (60, 4785), (61, 4788), (68, 4860),

Gene: Eudoria_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Eudoria_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Eviarto_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for Eviarto_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: Expelliarmus_6 Start: 4161, Stop: 4841, Start Num: 10

Candidate Starts for Expelliarmus_6:

(Start: 10 @4161 has 94 MA's), (11, 4176), (Start: 12 @4212 has 2 MA's), (23, 4317), (30, 4461), (32, 4476), (40, 4575), (41, 4587), (50, 4677), (60, 4752), (61, 4755), (68, 4827),

Gene: Fenry_19 Start: 18032, Stop: 18739, Start Num: 10

Candidate Starts for Fenry_19:

(Start: 10 @18032 has 94 MA's), (Start: 12 @18083 has 2 MA's), (19, 18125), (21, 18161), (30, 18332), (39, 18425), (43, 18491), (54, 18584), (69, 18728),

Gene: Frokostdame_20 Start: 18282, Stop: 18989, Start Num: 10

Candidate Starts for Frokostdame_20:

(Start: 10 @18282 has 94 MA's), (Start: 12 @18333 has 2 MA's), (19, 18375), (21, 18411), (30, 18582), (39, 18675), (43, 18741), (54, 18834), (69, 18978),

Gene: GMA5_5 Start: 3196, Stop: 3984, Start Num: 10

Candidate Starts for GMA5_5:

(2, 2782), (Start: 10 @3196 has 94 MA's), (Start: 12 @3247 has 2 MA's), (19, 3289), (30, 3496), (34, 3520), (37, 3550), (39, 3589), (47, 3700), (48, 3715), (63, 3829), (64, 3856), (69, 3910), (72, 3949),

Gene: GRU3_5 Start: 3244, Stop: 4032, Start Num: 10

Candidate Starts for GRU3_5:

(Start: 10 @3244 has 94 MA's), (Start: 12 @3295 has 2 MA's), (14, 3319), (17, 3328), (19, 3337), (20, 3349), (30, 3544), (33, 3565), (34, 3568), (35, 3580), (39, 3637), (47, 3748), (63, 3877), (64, 3904), (69, 3958), (72, 3997),

Gene: Gambino_22 Start: 18628, Stop: 19335, Start Num: 10

Candidate Starts for Gambino_22:

(Start: 10 @18628 has 94 MA's), (Start: 12 @18679 has 2 MA's), (19, 18721), (21, 18757), (30, 18928), (39, 19021), (43, 19087), (54, 19180), (58, 19222), (69, 19324),

Gene: Groundhog_6 Start: 4162, Stop: 4842, Start Num: 10

Candidate Starts for Groundhog_6:

(Start: 10 @4162 has 94 MA's), (11, 4177), (Start: 12 @4213 has 2 MA's), (23, 4318), (30, 4462), (32, 4477), (40, 4576), (41, 4588), (50, 4678), (60, 4753), (61, 4756), (68, 4828),

Gene: Guacamole_20 Start: 18317, Stop: 19024, Start Num: 10

Candidate Starts for Guacamole_20:

(Start: 10 @18317 has 94 MA's), (Start: 12 @18368 has 2 MA's), (19, 18410), (21, 18446), (30, 18617), (39, 18710), (43, 18776), (54, 18869), (69, 19013),

Gene: Herod_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for Herod_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: Hitter_20 Start: 18313, Stop: 19020, Start Num: 10

Candidate Starts for Hitter_20:

(Start: 10 @18313 has 94 MA's), (Start: 12 @18364 has 2 MA's), (19, 18406), (21, 18442), (23, 18457), (30, 18613), (39, 18706), (43, 18772), (54, 18865), (69, 19009),

Gene: Holliday_22 Start: 18726, Stop: 19385, Start Num: 12

Candidate Starts for Holliday_22:

(6, 18642), (Start: 10 @18675 has 94 MA's), (Start: 12 @18726 has 2 MA's), (19, 18771), (25, 18861), (27, 18897), (29, 18972), (32, 18996), (39, 19074), (43, 19140), (44, 19167), (54, 19233), (56, 19263),

(59, 19284), (69, 19374),

Gene: Hugley_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for Hugley_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: Jablanski_22 Start: 19787, Stop: 20500, Start Num: 10

Candidate Starts for Jablanski_22:

(Start: 10 @19787 has 94 MA's), (Start: 12 @19838 has 2 MA's), (19, 19883), (27, 20009), (29, 20084), (31, 20093), (32, 20108), (37, 20147), (39, 20186), (43, 20252), (54, 20345), (69, 20489),

Gene: Jalamah_22 Start: 19107, Stop: 19814, Start Num: 10

Candidate Starts for Jalamah_22:

(Start: 10 @19107 has 94 MA's), (Start: 12 @19158 has 2 MA's), (19, 19200), (21, 19236), (23, 19251), (30, 19407), (39, 19500), (43, 19566), (54, 19659), (69, 19803),

Gene: JasperJr_20 Start: 18317, Stop: 19024, Start Num: 10

Candidate Starts for JasperJr_20:

(Start: 10 @18317 has 94 MA's), (Start: 12 @18368 has 2 MA's), (19, 18410), (21, 18446), (30, 18617), (39, 18710), (43, 18776), (54, 18869), (69, 19013),

Gene: JuJu_20 Start: 18238, Stop: 18942, Start Num: 10

Candidate Starts for JuJu_20:

(Start: 10 @18238 has 94 MA's), (Start: 12 @18289 has 2 MA's), (19, 18331), (20, 18343), (21, 18367), (30, 18538), (39, 18631), (49, 18757), (54, 18790), (55, 18811), (68, 18931),

Gene: Kamaru_22 Start: 18675, Stop: 19385, Start Num: 10

Candidate Starts for Kamaru_22:

(6, 18642), (Start: 10 @18675 has 94 MA's), (Start: 12 @18726 has 2 MA's), (19, 18771), (25, 18861), (27, 18897), (29, 18972), (32, 18996), (39, 19074), (43, 19140), (44, 19167), (54, 19233), (56, 19263), (59, 19284), (69, 19374),

Gene: KappaFarmDelta_20 Start: 18481, Stop: 19188, Start Num: 10

Candidate Starts for KappaFarmDelta_20:

(Start: 10 @18481 has 94 MA's), (Start: 12 @18532 has 2 MA's), (19, 18574), (21, 18610), (23, 18625), (30, 18781), (39, 18874), (43, 18940), (50, 19009), (54, 19033), (67, 19162), (69, 19177),

Gene: Kita_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Kita_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Lysidious_21 Start: 18837, Stop: 19544, Start Num: 10

Candidate Starts for Lysidious_21:

(Start: 10 @18837 has 94 MA's), (Start: 12 @18888 has 2 MA's), (19, 18930), (21, 18966), (23, 18981), (30, 19137), (39, 19230), (43, 19296), (54, 19389), (69, 19533),

Gene: Madeline_20 Start: 19755, Stop: 20459, Start Num: 10

Candidate Starts for Madeline_20:

(Start: 7 @19722 has 1 MA's), (Start: 10 @19755 has 94 MA's), (Start: 12 @19806 has 2 MA's), (19, 19848), (21, 19884), (30, 20055), (34, 20079), (39, 20148), (43, 20214), (54, 20307), (68, 20448),

Gene: Malachai_21 Start: 18791, Stop: 19498, Start Num: 10

Candidate Starts for Malachai_21:

(Start: 10 @18791 has 94 MA's), (Start: 12 @18842 has 2 MA's), (19, 18884), (21, 18920), (30, 19091), (39, 19184), (43, 19250), (54, 19343), (69, 19487),

Gene: Malibo_22 Start: 18630, Stop: 19343, Start Num: 10

Candidate Starts for Malibo_22:

(9, 18615), (Start: 10 @18630 has 94 MA's), (Start: 12 @18681 has 2 MA's), (19, 18726), (24, 18801), (29, 18927), (31, 18936), (32, 18951), (39, 19029), (42, 19083), (43, 19095), (54, 19188), (69, 19332),

Gene: Malisha_23 Start: 20456, Stop: 21166, Start Num: 10

Candidate Starts for Malisha_23:

(6, 20423), (Start: 10 @20456 has 94 MA's), (Start: 12 @20507 has 2 MA's), (19, 20552), (25, 20642), (27, 20678), (29, 20753), (32, 20777), (39, 20855), (43, 20921), (54, 21014), (56, 21044), (59, 21065), (69, 21155),

Gene: Manasvini_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Manasvini_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Maridalia_19 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Maridalia_19:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Melba_20 Start: 18313, Stop: 19020, Start Num: 10

Candidate Starts for Melba_20:

(Start: 10 @18313 has 94 MA's), (Start: 12 @18364 has 2 MA's), (19, 18406), (21, 18442), (30, 18613), (39, 18706), (43, 18772), (54, 18865), (69, 19009),

Gene: Mellie_19 Start: 18074, Stop: 18781, Start Num: 10

Candidate Starts for Mellie_19:

(Start: 10 @18074 has 94 MA's), (Start: 12 @18125 has 2 MA's), (19, 18167), (21, 18203), (23, 18218), (30, 18374), (39, 18467), (43, 18533), (44, 18560), (54, 18626), (69, 18770),

Gene: MintFen_20 Start: 18313, Stop: 19020, Start Num: 10

Candidate Starts for MintFen_20:

(Start: 10 @18313 has 94 MA's), (Start: 12 @18364 has 2 MA's), (19, 18406), (21, 18442), (30, 18613), (39, 18706), (43, 18772), (54, 18865), (69, 19009),

Gene: MissRona_22 Start: 18628, Stop: 19335, Start Num: 10

Candidate Starts for MissRona_22:

(Start: 10 @18628 has 94 MA's), (Start: 12 @18679 has 2 MA's), (19, 18721), (21, 18757), (30, 18928), (39, 19021), (43, 19087), (54, 19180), (58, 19222), (69, 19324),

Gene: Murp_20 Start: 18381, Stop: 19088, Start Num: 10

Candidate Starts for Murp_20:

(Start: 10 @18381 has 94 MA's), (Start: 12 @18432 has 2 MA's), (15, 18459), (19, 18474), (20, 18486), (21, 18510), (23, 18525), (28, 18624), (30, 18681), (39, 18774), (43, 18840), (50, 18909), (54, 18933),

(67, 19062), (69, 19077),

Gene: Naca_6 Start: 4378, Stop: 5058, Start Num: 10

Candidate Starts for Naca_6:

(5, 4291), (Start: 10 @4378 has 94 MA's), (11, 4393), (Start: 12 @4429 has 2 MA's), (28, 4621), (30, 4678), (38, 4735), (40, 4786), (41, 4798), (68, 5044),

Gene: NearlyHeadless_7 Start: 4201, Stop: 4878, Start Num: 10

Candidate Starts for NearlyHeadless_7:

(Start: 10 @4201 has 94 MA's), (11, 4216), (Start: 12 @4252 has 2 MA's), (23, 4357), (30, 4501), (32, 4516), (40, 4615), (41, 4627), (61, 4792), (68, 4864),

Gene: Neobush_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Neobush_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Nymphadora_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for Nymphadora_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: Obliviate_19 Start: 18103, Stop: 18810, Start Num: 10

Candidate Starts for Obliviate_19:

(Start: 10 @18103 has 94 MA's), (Start: 12 @18154 has 2 MA's), (19, 18196), (30, 18403), (39, 18496), (43, 18562), (44, 18589), (54, 18655), (69, 18799),

Gene: Ohgeesy_20 Start: 19080, Stop: 19784, Start Num: 10

Candidate Starts for Ohgeesy_20:

(Start: 7 @19047 has 1 MA's), (Start: 10 @19080 has 94 MA's), (Start: 12 @19131 has 2 MA's), (19, 19173), (21, 19209), (30, 19380), (34, 19404), (39, 19473), (43, 19539), (54, 19632), (68, 19773),

Gene: PCoral7_20 Start: 18403, Stop: 19116, Start Num: 10

Candidate Starts for PCoral7_20:

(Start: 10 @18403 has 94 MA's), (Start: 12 @18454 has 2 MA's), (13, 18475), (19, 18499), (20, 18514), (22, 18541), (24, 18574), (25, 18589), (27, 18625), (29, 18700), (31, 18709), (32, 18724), (39, 18802), (43, 18868), (54, 18961), (58, 19003), (68, 19102),

Gene: PantheRoc_20 Start: 18788, Stop: 19492, Start Num: 10

Candidate Starts for PantheRoc_20:

(Start: 7 @18755 has 1 MA's), (Start: 10 @18788 has 94 MA's), (Start: 12 @18839 has 2 MA's), (19, 18881), (21, 18917), (30, 19088), (34, 19112), (39, 19181), (43, 19247), (54, 19340), (68, 19481),

Gene: PetterN_7 Start: 4265, Stop: 4945, Start Num: 10

Candidate Starts for PetterN_7:

(5, 4181), (Start: 8 @4241 has 2 MA's), (Start: 10 @4265 has 94 MA's), (11, 4280), (Start: 12 @4316 has 2 MA's), (28, 4508), (30, 4565), (38, 4622), (40, 4673), (41, 4685), (68, 4931),

Gene: Phillis_7 Start: 4159, Stop: 4836, Start Num: 10

Candidate Starts for Phillis_7:

(Start: 10 @4159 has 94 MA's), (Start: 12 @4210 has 2 MA's), (23, 4315), (30, 4459), (32, 4474), (40, 4573), (41, 4585), (60, 4747), (61, 4750), (68, 4822),

Gene: PhrostedPhlake_21 Start: 18689, Stop: 19396, Start Num: 10

Candidate Starts for PhrostedPhlake_21:

(Start: 10 @18689 has 94 MA's), (Start: 12 @18740 has 2 MA's), (19, 18782), (21, 18818), (23, 18833), (30, 18989), (36, 19031), (39, 19082), (43, 19148), (54, 19241), (69, 19385),

Gene: Pipp_20 Start: 18307, Stop: 19014, Start Num: 10

Candidate Starts for Pipp_20:

(Start: 10 @18307 has 94 MA's), (Start: 12 @18358 has 2 MA's), (19, 18400), (21, 18436), (23, 18451), (30, 18607), (39, 18700), (43, 18766), (44, 18793), (54, 18859), (69, 19003),

Gene: Posh_22 Start: 19640, Stop: 20353, Start Num: 10

Candidate Starts for Posh_22:

(Start: 10 @19640 has 94 MA's), (Start: 12 @19691 has 2 MA's), (19, 19736), (27, 19862), (29, 19937), (31, 19946), (32, 19961), (37, 20000), (39, 20039), (43, 20105), (54, 20198), (69, 20342),

Gene: Pytheas_22 Start: 19786, Stop: 20499, Start Num: 10

Candidate Starts for Pytheas_22:

(Start: 10 @19786 has 94 MA's), (Start: 12 @19837 has 2 MA's), (19, 19882), (27, 20008), (29, 20083), (31, 20092), (32, 20107), (37, 20146), (39, 20185), (43, 20251), (54, 20344), (69, 20488),

Gene: Rahul_5 Start: 3256, Stop: 4038, Start Num: 10

Candidate Starts for Rahul_5:

(2, 2836), (Start: 10 @3256 has 94 MA's), (Start: 12 @3307 has 2 MA's), (13, 3328), (16, 3346), (30, 3559), (38, 3616), (39, 3652), (47, 3754), (52, 3790), (62, 3865), (71, 3964), (73, 4018),

Gene: Roary_7 Start: 4160, Stop: 4840, Start Num: 10

Candidate Starts for Roary_7:

(Start: 10 @4160 has 94 MA's), (11, 4175), (Start: 12 @4211 has 2 MA's), (23, 4316), (30, 4460), (32, 4475), (40, 4574), (41, 4586), (60, 4751), (61, 4754), (68, 4826),

Gene: Ruthy_24 Start: 21732, Stop: 22394, Start Num: 12

Candidate Starts for Ruthy_24:

(Start: 10 @21681 has 94 MA's), (Start: 12 @21732 has 2 MA's), (19, 21777), (25, 21867), (27, 21903), (29, 21978), (32, 22002), (39, 22080), (42, 22134), (43, 22146), (44, 22173), (46, 22185), (54, 22239), (69, 22383),

Gene: Saintus_7 Start: 4176, Stop: 4853, Start Num: 10

Candidate Starts for Saintus_7:

(Start: 10 @4176 has 94 MA's), (11, 4191), (Start: 12 @4227 has 2 MA's), (23, 4332), (30, 4476), (32, 4491), (40, 4590), (41, 4602), (61, 4767), (68, 4839),

Gene: Samba_20 Start: 18391, Stop: 19098, Start Num: 10

Candidate Starts for Samba_20:

(Start: 10 @18391 has 94 MA's), (Start: 12 @18442 has 2 MA's), (19, 18484), (21, 18520), (23, 18535), (30, 18691), (39, 18784), (43, 18850), (54, 18943), (69, 19087),

Gene: Scorpia_7 Start: 4242, Stop: 4946, Start Num: 8

Candidate Starts for Scorpia_7:

(5, 4182), (Start: 8 @4242 has 2 MA's), (Start: 10 @4266 has 94 MA's), (11, 4281), (Start: 12 @4317 has 2 MA's), (28, 4509), (30, 4566), (38, 4623), (40, 4674), (41, 4686), (68, 4932),

Gene: Sidious_20 Start: 18909, Stop: 19616, Start Num: 10

Candidate Starts for Sidious_20:

(Start: 10 @18909 has 94 MA's), (Start: 12 @18960 has 2 MA's), (19, 19002), (20, 19014), (21, 19038), (30, 19209), (39, 19302), (49, 19428), (54, 19461), (55, 19482), (69, 19605),

Gene: Smeadley_7 Start: 4193, Stop: 4873, Start Num: 10

Candidate Starts for Smeadley_7:

(4, 4070), (Start: 10 @4193 has 94 MA's), (11, 4208), (Start: 12 @4244 has 2 MA's), (23, 4349), (30, 4493), (32, 4508), (40, 4607), (41, 4619), (50, 4709), (60, 4784), (61, 4787), (66, 4847), (68, 4859),

Gene: Spooky_22 Start: 18665, Stop: 19375, Start Num: 10

Candidate Starts for Spooky_22:

(6, 18632), (Start: 10 @18665 has 94 MA's), (Start: 12 @18716 has 2 MA's), (19, 18761), (25, 18851), (27, 18887), (29, 18962), (32, 18986), (39, 19064), (43, 19130), (54, 19223), (56, 19253), (59, 19274), (69, 19364),

Gene: Squiddly_24 Start: 20077, Stop: 20787, Start Num: 10

Candidate Starts for Squiddly_24:

(6, 20044), (Start: 10 @20077 has 94 MA's), (Start: 12 @20128 has 2 MA's), (19, 20173), (25, 20263), (27, 20299), (29, 20374), (32, 20398), (39, 20476), (43, 20542), (54, 20635), (56, 20665), (59, 20686), (69, 20776),

Gene: Stephig9_7 Start: 4161, Stop: 4841, Start Num: 10

Candidate Starts for Stephig9_7:

(Start: 10 @4161 has 94 MA's), (11, 4176), (Start: 12 @4212 has 2 MA's), (23, 4317), (30, 4461), (32, 4476), (40, 4575), (41, 4587), (50, 4677), (60, 4752), (61, 4755), (68, 4827),

Gene: Suscepit_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Suscepit_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Tayonia_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Tayonia_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: ThankyouJordi_19 Start: 19426, Stop: 20133, Start Num: 10

Candidate Starts for ThankyouJordi_19:

(Start: 10 @19426 has 94 MA's), (Start: 12 @19477 has 2 MA's), (19, 19519), (21, 19555), (23, 19570), (30, 19726), (39, 19819), (45, 19915), (50, 19954), (54, 19978), (69, 20122),

Gene: TimTam_20 Start: 19457, Stop: 20161, Start Num: 10

Candidate Starts for TimTam_20:

(Start: 7 @19424 has 1 MA's), (Start: 10 @19457 has 94 MA's), (Start: 12 @19508 has 2 MA's), (19, 19550), (21, 19586), (30, 19757), (34, 19781), (39, 19850), (43, 19916), (54, 20009), (68, 20150),

Gene: Toast_20 Start: 18403, Stop: 19116, Start Num: 10

Candidate Starts for Toast_20:

(Start: 10 @18403 has 94 MA's), (Start: 12 @18454 has 2 MA's), (13, 18475), (19, 18499), (20, 18514), (22, 18541), (24, 18574), (25, 18589), (27, 18625), (29, 18700), (31, 18709), (32, 18724), (39, 18802), (43, 18868), (54, 18961), (58, 19003), (68, 19102),

Gene: Trumpet_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Trumpet_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: UmaThurman_20 Start: 18441, Stop: 19145, Start Num: 10

Candidate Starts for UmaThurman_20:

(Start: 10 @18441 has 94 MA's), (Start: 12 @18492 has 2 MA's), (19, 18534), (21, 18570), (30, 18741), (39, 18834), (43, 18900), (44, 18927), (54, 18993), (68, 19134),

Gene: Utz_20 Start: 18308, Stop: 19015, Start Num: 10

Candidate Starts for Utz_20:

(Start: 10 @18308 has 94 MA's), (Start: 12 @18359 has 2 MA's), (19, 18401), (21, 18437), (30, 18608), (39, 18701), (43, 18767), (54, 18860), (69, 19004),

Gene: Walrus_21 Start: 18536, Stop: 19243, Start Num: 10

Candidate Starts for Walrus_21:

(Start: 10 @18536 has 94 MA's), (Start: 12 @18587 has 2 MA's), (19, 18629), (30, 18836), (39, 18929), (43, 18995), (54, 19088), (69, 19232),

Gene: WelcomeAyanna_19 Start: 19426, Stop: 20133, Start Num: 10

Candidate Starts for WelcomeAyanna_19:

(Start: 10 @19426 has 94 MA's), (Start: 12 @19477 has 2 MA's), (19, 19519), (21, 19555), (23, 19570), (30, 19726), (39, 19819), (45, 19915), (50, 19954), (54, 19978), (69, 20122),

Gene: Whitney_23 Start: 19479, Stop: 20189, Start Num: 10

Candidate Starts for Whitney_23:

(6, 19446), (Start: 10 @19479 has 94 MA's), (Start: 12 @19530 has 2 MA's), (19, 19575), (25, 19665), (27, 19701), (29, 19776), (32, 19800), (39, 19878), (43, 19944), (44, 19971), (54, 20037), (56, 20067), (59, 20088), (69, 20178),

Gene: William_20 Start: 18351, Stop: 19064, Start Num: 10

Candidate Starts for William_20:

(Start: 10 @18351 has 94 MA's), (Start: 12 @18402 has 2 MA's), (13, 18423), (19, 18447), (20, 18462), (24, 18522), (27, 18573), (29, 18648), (31, 18657), (32, 18672), (39, 18750), (43, 18816), (50, 18885), (54, 18909), (67, 19038), (68, 19050), (69, 19053),

Gene: Wisp_19 Start: 18026, Stop: 18730, Start Num: 10

Candidate Starts for Wisp_19:

(Start: 10 @18026 has 94 MA's), (Start: 12 @18077 has 2 MA's), (19, 18119), (21, 18155), (30, 18326), (39, 18419), (43, 18485), (44, 18512), (54, 18578), (68, 18719),

Gene: Wrigley_22 Start: 19537, Stop: 20250, Start Num: 10

Candidate Starts for Wrigley_22:

(Start: 10 @19537 has 94 MA's), (Start: 12 @19588 has 2 MA's), (19, 19633), (27, 19759), (29, 19834), (31, 19843), (32, 19858), (37, 19897), (39, 19936), (43, 20002), (54, 20095), (69, 20239),

Gene: Yeezy_21 Start: 18779, Stop: 19516, Start Num: 7

Candidate Starts for Yeezy_21:

(Start: 7 @18779 has 1 MA's), (Start: 10 @18812 has 94 MA's), (Start: 12 @18863 has 2 MA's), (19, 18905), (21, 18941), (30, 19112), (34, 19136), (39, 19205), (43, 19271), (54, 19364), (68, 19505),

Gene: Zameen_20 Start: 19391, Stop: 20098, Start Num: 10

Candidate Starts for Zameen_20:

(Start: 10 @19391 has 94 MA's), (Start: 12 @19442 has 2 MA's), (19, 19484), (21, 19520), (23, 19535), (29, 19688), (30, 19691), (34, 19715), (36, 19733), (39, 19784), (43, 19850), (50, 19919), (54, 19943), (69, 20087),

Gene: Zarbodnamra_20 Start: 18312, Stop: 19019, Start Num: 10

Candidate Starts for Zarbodnamra_20:

(Start: 10 @18312 has 94 MA's), (Start: 12 @18363 has 2 MA's), (19, 18405), (21, 18441), (23, 18456), (30, 18612), (39, 18705), (43, 18771), (54, 18864), (69, 19008),

Gene: ZiggyZoo_19 Start: 18103, Stop: 18810, Start Num: 10

Candidate Starts for ZiggyZoo_19:

(Start: 10 @18103 has 94 MA's), (Start: 12 @18154 has 2 MA's), (19, 18196), (30, 18403), (39, 18496), (43, 18562), (44, 18589), (54, 18655), (69, 18799),

Gene: Zirinka_20 Start: 19469, Stop: 20173, Start Num: 10

Candidate Starts for Zirinka_20:

(Start: 7 @19436 has 1 MA's), (Start: 10 @19469 has 94 MA's), (Start: 12 @19520 has 2 MA's), (19, 19562), (21, 19598), (30, 19769), (34, 19793), (39, 19862), (43, 19928), (54, 20021), (68, 20162),