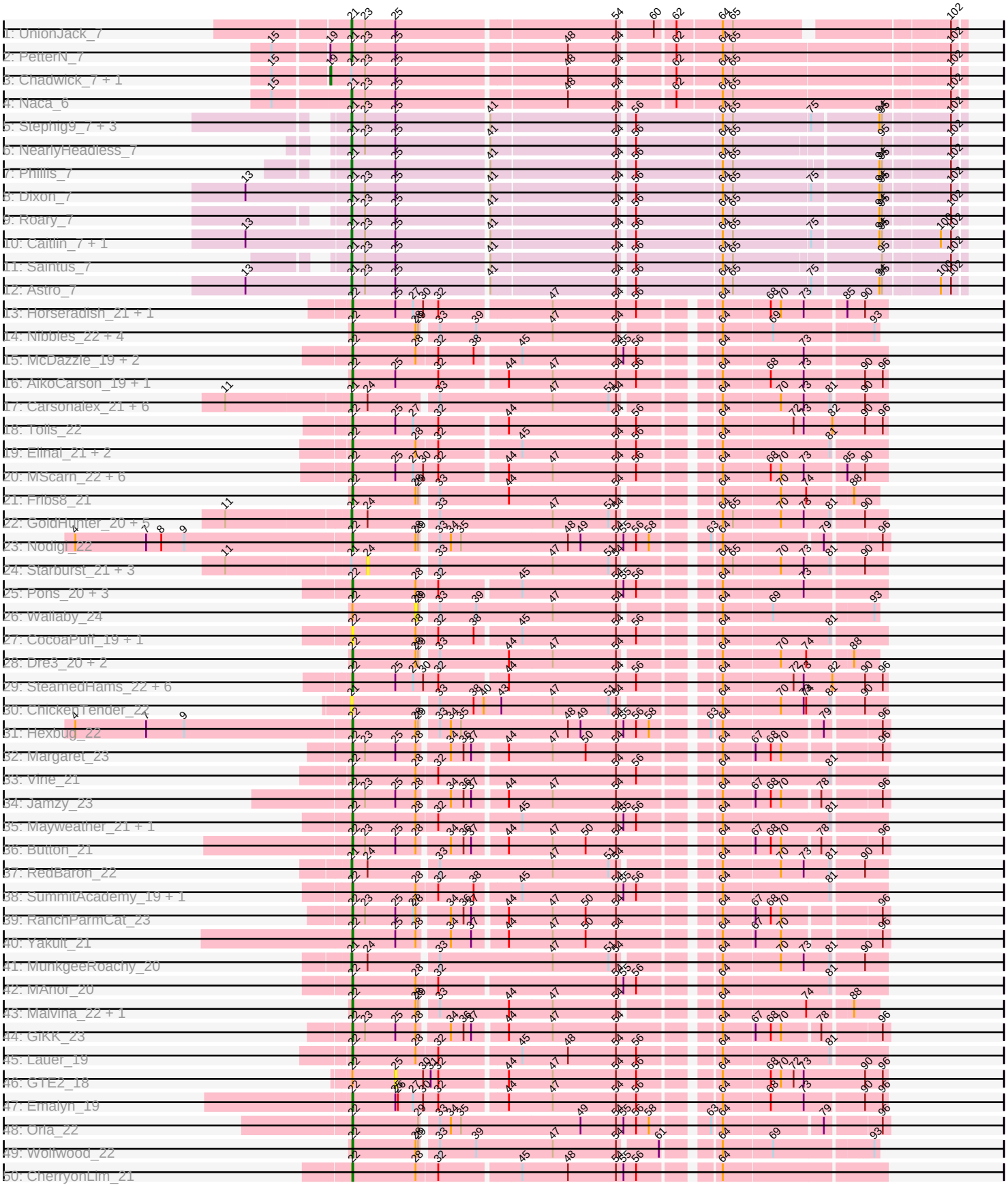
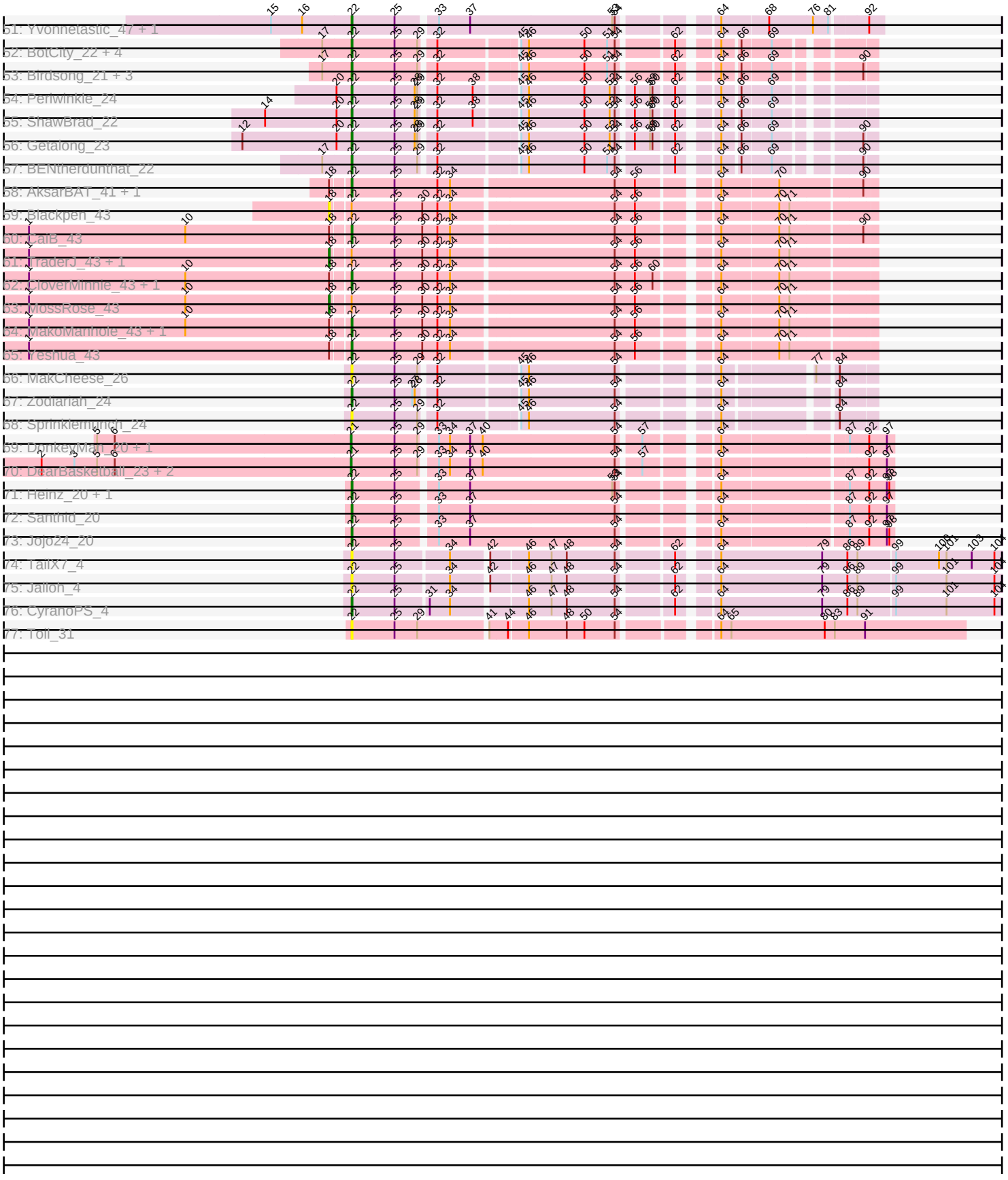
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1: UnionJack_7
2: PetterN_7
3: Chadwick_7 + 1
4: Naca_6
5: Stephig9_7 + 3
6: NearlyHeadless_7
7: Phillis_7
8: Dixon_7
9: Roary_7
10: Caitlin_7 + 1
11: Saintus_7
12: Astro_7
13: Horseradish_21 + 1
14: Nibbles_22 + 4
15: McDazzle_19 + 2
16: AikoCarson_19 + 1
17: Carsonalex_21 + 6
18: Tolls_22
19: Elinal_21 + 2
20: MScarn_22 + 6
21: Fribs8_21
22: GoldHunter_20 + 5
23: Nodigi_22
24: Starburst_21 + 3
25: Pons_20 + 3
26: Wallaby_24
27: CocoaPuff_19 + 1
28: Dre3_20 + 2
29: SteamedHams_22 + 6
30: ChickenTender_22
31: Hexbug_22
32: Margaret_23
33: Vine_21
34: Jamzy_23
35: Mayweather_21 + 1
36: Button_21
37: RedBaron_22
38: SummitAcademy_19 + 1
39: RanchParmCat_23
40: Yakult_21
41: MunkgeeRoachy_20
42: MAnor_20
43: Malvina_22 + 1
44: GIKK_23
45: Lauer_19
46: GTE2_18
47: Emalyn_19
48: Orla_22
49: Wolfwood_22
50: CherryonLim_21

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51: Yvonnetastic_47 + 1
52: BotCity_22 + 4
53: Birdsong_21 + 3
54: Periwinkle_24
55: ShawBrad_22
56: Getalong_23
57: BENtherdunthat_22
58: AksarBAT_41 + 1
59: Blackpen_43
60: CalB_43
61: TraderJ_43 + 1
62: CloverMinnie_43 + 1
63: MossRose_43
64: MakoManhole_43 + 1
65: Yeshua_43
66: MakCheese_26
67: Zodiarian_24
68: Sprinklemunch_24
69: DonkeyMan_20 + 1
70: DearBasketball_23 + 2
71: Heinz_20 + 1
72: Santhid_20
73: Jojo24_20
74: TallX7_4
75: Jallon_4
76: CyranoPS_4
77: Toll_31

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 347359 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347359 has 143 members, 26 are drafts.

Phages represented in each track:
• Track 1 : UnionJack_7
• Track 2 : PetterN_7
• Track 3 : Chadwick_7, Scorpia_7
• Track 4 : Naca_6
• Track 5 : Stephig9_7, Expelliarmus_6, Danforth_6, Groundhog_6
• Track 6 : NearlyHeadless_7
• Track 7 : Phillis_7
• Track 8 : Dixon_7
• Track 9 : Roary_7
• Track 10 : Caitlin_7, Smeadley_7
• Track 11 : Saintus_7
• Track 12 : Astro_7
• Track 13 : Horseradish_21, Yummy_21
• Track 14 : Nibbles_22, MaVan_22, Azira_22, Survivors_22, Zareef_22
• Track 15 : McDazzle_19, ElJefes_19, SheckWes_19
• Track 16 : AikoCarson_19, Amok_19
• Track 17 : Carsonalex_21, Burnsey_20, RSchmailzl_21, Nina_21, Typhonomachy_20, Agatha_20, Bubble_20
• Track 18 : Tolls_22
• Track 19 : Elinal_21, Yucky_20, KayGee_20
• Track 20 : MScarn_22, Blondies_21, Biskit_21, Buttrmlkdreams_20, Troje_20, SweatNTears_22, SketchMex_19
• Track 21 : Fribs8_21
• Track 22 : GoldHunter_20, Sopespian_20, Axym_20, Cozz_20, Socotra_21, Quasar_20
• Track 23 : Nodigi_22
• Track 24 : Starburst_21, RADical_21, PsychoKiller_20, Eliott_20
• Track 25 : Pons_20, Feastonyeet_19, Tarnish_20, BigChungus_19
• Track 26 : Wallaby_24
• Track 27 : CocoaPuff_19, Balloona_19
• Track 28 : Dre3_20, Gibbous_20, Cleo_20
• Track 29 : SteamedHams_22, BillDoor_22, CanesSauce_20, Yarn_19, CaramelLatte_20, ChocoMunchkin_20, AndPeggy_19
• Track 30 : ChickenTender_22
• Track 31 : Hexbug_22
• Track 32 : Margaret_23
• Track 33 : Vine_21

• Track 34 : Jamzy_23
• Track 35 : Mayweather_21, Bavilard_20
• Track 36 : Button_21
• Track 37 : RedBaron_22
• Track 38 : SummitAcademy_19, PotPie_20
• Track 39 : RanchParmCat_23
• Track 40 : Yakult_21
• Track 41 : MunkgeeRoachy_20
• Track 42 : MAnor_20
• Track 43 : Malvina_22, HippoPololi_22
• Track 44 : GiKK_23
• Track 45 : Lauer_19
• Track 46 : GTE2_18
• Track 47 : Emalyn_19
• Track 48 : Orla_22
• Track 49 : Wolfwood_22
• Track 50 : CherryonLim_21
• Track 51 : Yvonnetastic_47, JonJames_49
• Track 52 : BotCity_22, CheeseTouch_22, Lutum_22, Kenna_21, Asapag_22
• Track 53 : Birdsong_21, BearBQ_21, Kuwabara_21, MortyNRick_21
• Track 54 : Periwinkle_24
• Track 55 : ShawBrad_22
• Track 56 : Getalong_23
• Track 57 : BENtherdunthat_22
• Track 58 : AksarBAT_41, NHagos_41
• Track 59 : Blackpen_43
• Track 60 : CaiB_43
• Track 61 : TraderJ_43, Wooper_43
• Track 62 : CloverMinnie_43, FelixTres_43
• Track 63 : MossRose_43
• Track 64 : MakoManhole_43, AnarQue_43
• Track 65 : Yeshua_43
• Track 66 : MakCheese_26
• Track 67 : Zodiariah_24
• Track 68 : Sprinklemunch_24
• Track 69 : DonkeyMan_20, Tarzan_20
• Track 70 : DearBasketball_23, DinoNuggs_21, Reyja_21
• Track 71 : Heinz_20, Hibiscus_20
• Track 72 : Santhid_20
• Track 73 : Jojo24_20
• Track 74 : TailX7_4
• Track 75 : Jalloh_4
• Track 76 : CyranoPS_4
• Track 77 : Toil_31

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

The start number called the most often in the published annotations is 22, it was called in 81 of the 117 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AikoCarson_19, AksarBAT_41, Amok_19, AnarQue_43, AndPeggy_19, Asapag_22, Azira_22, BENtherdunthat_22, Balloona_19, Bavilard_20, BearBQ_21, BigChungus_19, BillDoor_22, Birdsong_21, Biskit_21, Blondies_21, BotCity_22, Button_21, Buttrmlkdreams_20, CaiB_43, CanesSauce_20, CaramelLatte_20, CheeseTouch_22, CherryonLim_21, ChocoMunchkin_20, Cleo_20, CloverMinnie_43, CocoaPuff_19, CyranoPS_4, Dre3_20, ElJefes_19, Elinal_21, Emalyn_19, Feastonyeet_19, FelixTres_43, Fribs8_21, Getalong_23, GiKK_23, Gibbous_20, Heinz_20, Hexbug_22, Hibiscus_20, HippoPololi_22, Horseradish_21, Jalloh_4, Jamzy_23, Jojo24_20, JonJames_49, KayGee_20, Kenna_21, Kuwabara_21, Lauer_19, Lutum_22, MAnor_20, MScarn_22, MaVan_22, MakCheese_26, MakoManhole_43, Malvina_22, Margaret_23, Mayweather_21, McDazzle_19, MortyNRick_21, NHagos_41, Nibbles_22, Nodigi_22, Orla_22, Periwinkle_24, Pons_20, PotPie_20, RanchParmCat_23, Santhid_20, ShawBrad_22, SheckWes_19, SketchMex_19, Sprinklemunch_24, SteamedHams_22, SummitAcademy_19, Survivors_22, SweatNTears_22, TailX7_4, Tarnish_20, Toil_31, Tolls_22, Troje_20, Vine_21, Wolfwood_22, Yakult_21, Yarn_19, Yeshua_43, Yucky_20, Yummy_21, Yvonnetastic_47, Zareef_22, Zodiariah_24,

Genes that have the "Most Annotated" start but do not call it:
• Blackpen_43, GTE2_18, MossRose_43, TraderJ_43, Wallaby_24, Wooper_43,

Genes that do not have the "Most Annotated" start:
• Agatha_20, Astro_7, Axym_20, Bubble_20, Burnsey_20, Caitlin_7, Carsonalex_21, Chadwick_7, ChickenTender_22, Cozz_20, Danforth_6, DearBasketball_23, DinoNuggs_21, Dixon_7, DonkeyMan_20, Eliott_20, Expelliarmus_6, GoldHunter_20, Groundhog_6, MunkgeeRoachy_20, Naca_6, NearlyHeadless_7, Nina_21, PetterN_7, Phillis_7, PsychoKiller_20, Quasar_20, RADical_21, RSchmailzl_21, RedBaron_22, Reyja_21, Roary_7, Saintus_7, Scorpia_7, Smeadley_7, Socotra_21, Sopespian_20, Starburst_21, Stephig9_7, Tarzan_20, Typhonomachy_20, UnionJack_7,

Summary by start number:

Start 18:
• Found in 12 of 143 (8.4%) of genes in pham
• Manual Annotations of this start: 2 of 117
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Blackpen_43 (DR), MossRose_43 (DR), TraderJ_43 (DR), Wooper_43 (DR),

Start 19:
• Found in 3 of 143 (2.1%) of genes in pham
• Manual Annotations of this start: 2 of 117
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Chadwick_7 (A5), Scorpia_7 (A5),

Start 21:
• Found in 42 of 143 (29.4%) of genes in pham
• Manual Annotations of this start: 32 of 117
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Agatha_20 (CT), Astro_7 (A8), Axym_20 (CT), Bubble_20 (CT), Burnsey_20 (CT), Caitlin_7 (A8), Carsonalex_21 (CT),

ChickenTender_22 (CT), Cozz_20 (CT), Danforth_6 (A8), DearBasketball_23 (DY), DinoNuggs_21 (DY), Dixon_7 (A8), DonkeyMan_20 (DY), Expelliarmus_6 (A8), GoldHunter_20 (CT), Groundhog_6 (A8), MunkgeeRoachy_20 (CT), Naca_6 (A5), NearlyHeadless_7 (A8), Nina_21 (CT), PetterN_7 (A5), Phillis_7 (A8), Quasar_20 (CT), RSchmailzl_21 (CT), RedBaron_22 (CT), Reyja_21 (DY), Roary_7 (A8), Saintus_7 (A8), Smeadley_7 (A8), Socotra_21 (CT), Sopespian_20 (CT), Stephig9_7 (A8), Tarzan_20 (DY), Typhonomachy_20 (CT), UnionJack_7 (A5),

Start 22:
• Found in 101 of 143 (70.6%) of genes in pham
• Manual Annotations of this start: 81 of 117
• Called 94.1% of time when present
• Phage (with cluster) where this start called: AikoCarson_19 (CT), AksarBAT_41 (DR), Amok_19 (CT), AnarQue_43 (DR), AndPeggy_19 (CT), Asapag_22 (DN1), Azira_22 (CT), BENtherdunthat_22 (DN1), Balloona_19 (CT), Bavilard_20 (CT), BearBQ_21 (DN), BigChungus_19 (CT), BillDoor_22 (CT), Birdsong_21 (DN), Biskit_21 (CT), Blondies_21 (CT), BotCity_22 (DN), Button_21 (CT), Buttrmlkdreams_20 (CT), CaiB_43 (DR), CanesSauce_20 (CT), CaramelLatte_20 (CT), CheeseTouch_22 (DN1), CherryonLim_21 (CT), ChocoMunchkin_20 (CT), Cleo_20 (CT), CloverMinnie_43 (DR), CocoaPuff_19 (CT), CyranoPS_4 (ER), Dre3_20 (CT), ElJefes_19 (CT), Elinal_21 (CT), Emalyn_19 (CT), Feastonyeet_19 (CT), FelixTres_43 (DR), Fribs8_21 (CT), Getalong_23 (DN1), GiKK_23 (CT), Gibbous_20 (CT), Heinz_20 (DY), Hexbug_22 (CT), Hibiscus_20 (DY), HippoPololi_22 (CT), Horseradish_21 (CT), Jalloh_4 (ER), Jamzy_23 (CT), Jojo24_20 (DY), JonJames_49 (DD), KayGee_20 (CT), Kenna_21 (DN1), Kuwabara_21 (DN4), Lauer_19 (CT), Lutum_22 (DN1), MAnor_20 (CT), MScarn_22 (CT), MaVan_22 (CT), MakCheese_26 (DW), MakoManhole_43 (DR), Malvina_22 (CT), Margaret_23 (CT), Mayweather_21 (CT), McDazzle_19 (CT), MortyNRick_21 (DN), NHagos_41 (DR), Nibbles_22 (CT), Nodigi_22 (CT), Orla_22 (CT), Periwinkle_24 (DN1), Pons_20 (CT), PotPie_20 (CT), RanchParmCat_23 (CT), Santhid_20 (DY), ShawBrad_22 (DN1), SheckWes_19 (CT), SketchMex_19 (CT), Sprinklemunch_24 (DW), SteamedHams_22 (CT), SummitAcademy_19 (CT), Survivors_22 (CT), SweatNTears_22 (CT), TailX7_4 (ER), Tarnish_20 (CT), Toil_31 (singleton), Tolls_22 (CT), Troje_20 (CT), Vine_21 (CT), Wolfwood_22 (CT), Yakult_21 (CT), Yarn_19 (CT), Yeshua_43 (DR), Yucky_20 (CT), Yummy_21 (CT), Yvonnetastic_47 (DD), Zareef_22 (CT), Zodiariah_24 (DW),

Start 24:
• Found in 19 of 143 (13.3%) of genes in pham
• No Manual Annotations of this start.
• Called 21.1% of time when present
• Phage (with cluster) where this start called: Eliott_20 (CT), PsychoKiller_20 (CT), RADical_21 (CT), Starburst_21 (CT),

Start 25:
• Found in 87 of 143 (60.8%) of genes in pham
• No Manual Annotations of this start.
• Called 1.1% of time when present
• Phage (with cluster) where this start called: GTE2_18 (CT),

Start 28:
• Found in 45 of 143 (31.5%) of genes in pham
• No Manual Annotations of this start.

• Called 2.2% of time when present
• Phage (with cluster) where this start called: Wallaby_24 (CT),

Summary by clusters:

There are 12 clusters represented in this pham: DN, singleton, DD, DW, DN4, DN1, DY, A8, A5, DR, ER, CT,

Info for manual annotations of cluster A5:
•Start number 19 was manually annotated 2 times for cluster A5.
•Start number 21 was manually annotated 3 times for cluster A5.

Info for manual annotations of cluster A8:
•Start number 21 was manually annotated 12 times for cluster A8.

Info for manual annotations of cluster CT:
•Start number 21 was manually annotated 14 times for cluster CT.
•Start number 22 was manually annotated 53 times for cluster CT.

Info for manual annotations of cluster DD:
•Start number 22 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DN:
•Start number 22 was manually annotated 4 times for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 22 was manually annotated 8 times for cluster DN1.

Info for manual annotations of cluster DN4:
•Start number 22 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DR:
•Start number 18 was manually annotated 2 times for cluster DR.
•Start number 22 was manually annotated 7 times for cluster DR.

Info for manual annotations of cluster DW:
•Start number 22 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster DY:
•Start number 21 was manually annotated 3 times for cluster DY.
•Start number 22 was manually annotated 4 times for cluster DY.

Info for manual annotations of cluster ER:
•Start number 22 was manually annotated 1 time for cluster ER.

Gene Information:

Gene: Agatha_20 Start: 17828, Stop: 18406, Start Num: 21
Candidate Starts for Agatha_20:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: AikoCarson_19 Start: 17137, Stop: 17727, Start Num: 22
Candidate Starts for AikoCarson_19:
(Start: 22 @17137 has 81 MA's), (25, 17188), (32, 17239), (44, 17314), (47, 17365), (54, 17440), (56, 17464), (64, 17542), (68, 17596), (73, 17635), (90, 17701), (96, 17722),

Gene: AksarBAT_41 Start: 34561, Stop: 35139, Start Num: 22
Candidate Starts for AksarBAT_41:
(Start: 18 @34543 has 2 MA's), (Start: 22 @34561 has 81 MA's), (25, 34612), (32, 34663), (34, 34678), (54, 34864), (56, 34888), (64, 34966), (70, 35032), (90, 35125),

Gene: Amok_19 Start: 17134, Stop: 17724, Start Num: 22
Candidate Starts for Amok_19:
(Start: 22 @17134 has 81 MA's), (25, 17185), (32, 17236), (44, 17311), (47, 17362), (54, 17437), (56, 17461), (64, 17539), (68, 17593), (73, 17632), (90, 17698), (96, 17719),

Gene: AnarQue_43 Start: 35973, Stop: 36551, Start Num: 22
Candidate Starts for AnarQue_43:
(1, 35598), (10, 35784), (Start: 18 @35955 has 2 MA's), (Start: 22 @35973 has 81 MA's), (25, 36024), (30, 36057), (32, 36075), (34, 36090), (54, 36276), (56, 36300), (64, 36378), (70, 36444), (71, 36456),

Gene: AndPeggy_19 Start: 17500, Stop: 18096, Start Num: 22
Candidate Starts for AndPeggy_19:
(Start: 22 @17500 has 81 MA's), (25, 17551), (27, 17572), (30, 17584), (32, 17602), (44, 17677), (54, 17803), (56, 17827), (64, 17905), (72, 17986), (73, 17998), (82, 18031), (90, 18070), (96, 18091),

Gene: Asapag_22 Start: 18682, Stop: 19215, Start Num: 22
Candidate Starts for Asapag_22:
(17, 18649), (Start: 22 @18682 has 81 MA's), (25, 18733), (29, 18760), (32, 18775), (45, 18862), (46, 18871), (50, 18937), (51, 18964), (54, 18973), (62, 19030), (64, 19066), (66, 19084), (69, 19117),

Gene: Astro_7 Start: 4196, Stop: 4876, Start Num: 21
Candidate Starts for Astro_7:
(13, 4070), (Start: 21 @4196 has 32 MA's), (23, 4211), (25, 4247), (41, 4352), (54, 4496), (56, 4511), (64, 4610), (65, 4622), (75, 4712), (94, 4787), (95, 4790), (100, 4850), (102, 4862),

Gene: Axym_20 Start: 17828, Stop: 18406, Start Num: 21
Candidate Starts for Axym_20:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (65, 18233), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: Azira_22 Start: 18806, Stop: 19369, Start Num: 22
Candidate Starts for Azira_22:
(Start: 22 @18806 has 81 MA's), (28, 18881), (29, 18884), (33, 18899), (39, 18941), (47, 19031), (54, 19106), (64, 19199), (69, 19256), (93, 19364),

Gene: BENtherdunthat_22 Start: 18682, Stop: 19215, Start Num: 22
Candidate Starts for BENtherdunthat_22:
(17, 18649), (Start: 22 @18682 has 81 MA's), (25, 18733), (29, 18760), (32, 18775), (45, 18862), (46, 18871), (50, 18937), (51, 18964), (54, 18973), (62, 19030), (64, 19066), (66, 19084), (69, 19117), (90, 19201),

Gene: Balloona_19 Start: 17505, Stop: 18092, Start Num: 22

Candidate Starts for Balloona_19:
(Start: 22 @17505 has 81 MA's), (28, 17580), (32, 17604), (38, 17646), (45, 17694), (54, 17805), (56, 17829), (64, 17907), (81, 18030),

Gene: Bavilard_20 Start: 18287, Stop: 18874, Start Num: 22
Candidate Starts for Bavilard_20:
(Start: 22 @18287 has 81 MA's), (28, 18362), (32, 18386), (45, 18476), (54, 18587), (55, 18596), (56, 18611), (64, 18689), (81, 18812),

Gene: BearBQ_21 Start: 19522, Stop: 20055, Start Num: 22
Candidate Starts for BearBQ_21:
(17, 19489), (Start: 22 @19522 has 81 MA's), (25, 19573), (29, 19600), (32, 19615), (45, 19702), (46, 19711), (50, 19777), (51, 19804), (54, 19813), (62, 19870), (64, 19906), (66, 19924), (69, 19957), (90, 20041),

Gene: BigChungus_19 Start: 17545, Stop: 18132, Start Num: 22
Candidate Starts for BigChungus_19:
(Start: 22 @17545 has 81 MA's), (28, 17620), (32, 17644), (45, 17734), (54, 17845), (55, 17854), (56, 17869), (64, 17947), (73, 18040),

Gene: BillDoor_22 Start: 17468, Stop: 18064, Start Num: 22
Candidate Starts for BillDoor_22:
(Start: 22 @17468 has 81 MA's), (25, 17519), (27, 17540), (30, 17552), (32, 17570), (44, 17645), (54, 17771), (56, 17795), (64, 17873), (72, 17954), (73, 17966), (82, 17999), (90, 18038), (96, 18059),

Gene: Birdsong_21 Start: 18415, Stop: 18948, Start Num: 22
Candidate Starts for Birdsong_21:
(17, 18382), (Start: 22 @18415 has 81 MA's), (25, 18466), (29, 18493), (32, 18508), (45, 18595), (46, 18604), (50, 18670), (51, 18697), (54, 18706), (62, 18763), (64, 18799), (66, 18817), (69, 18850), (90, 18934),

Gene: Biskit_21 Start: 17483, Stop: 18073, Start Num: 22
Candidate Starts for Biskit_21:
(Start: 22 @17483 has 81 MA's), (25, 17534), (27, 17555), (30, 17567), (32, 17585), (44, 17660), (47, 17711), (54, 17786), (56, 17810), (64, 17888), (68, 17942), (70, 17954), (73, 17981), (85, 18026), (90, 18047),

Gene: Blackpen_43 Start: 35373, Stop: 35969, Start Num: 18
Candidate Starts for Blackpen_43:
(Start: 18 @35373 has 2 MA's), (Start: 22 @35391 has 81 MA's), (25, 35442), (30, 35475), (32, 35493), (34, 35508), (54, 35694), (56, 35718), (64, 35796), (70, 35862), (71, 35874),

Gene: Blondies_21 Start: 17466, Stop: 18056, Start Num: 22
Candidate Starts for Blondies_21:
(Start: 22 @17466 has 81 MA's), (25, 17517), (27, 17538), (30, 17550), (32, 17568), (44, 17643), (47, 17694), (54, 17769), (56, 17793), (64, 17871), (68, 17925), (70, 17937), (73, 17964), (85, 18009), (90, 18030),

Gene: BotCity_22 Start: 18680, Stop: 19213, Start Num: 22
Candidate Starts for BotCity_22:
(17, 18647), (Start: 22 @18680 has 81 MA's), (25, 18731), (29, 18758), (32, 18773), (45, 18860), (46, 18869), (50, 18935), (51, 18962), (54, 18971), (62, 19028), (64, 19064), (66, 19082), (69, 19115),

Gene: Bubble_20 Start: 17828, Stop: 18406, Start Num: 21
Candidate Starts for Bubble_20:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: Burnsey_20 Start: 17829, Stop: 18407, Start Num: 21
Candidate Starts for Burnsey_20:
(11, 17688), (Start: 21 @17829 has 32 MA's), (24, 17847), (33, 17922), (47, 18054), (51, 18120), (54, 18129), (64, 18222), (70, 18288), (73, 18315), (81, 18345), (90, 18381),

Gene: Button_21 Start: 16864, Stop: 17439, Start Num: 22
Candidate Starts for Button_21:
(Start: 22 @16864 has 81 MA's), (23, 16879), (25, 16915), (28, 16939), (34, 16972), (36, 16987), (37, 16996), (44, 17032), (47, 17083), (50, 17122), (54, 17158), (64, 17260), (67, 17296), (68, 17314), (70, 17326), (78, 17368), (96, 17431),

Gene: Buttrmlkdreams_20 Start: 17465, Stop: 18055, Start Num: 22
Candidate Starts for Buttrmlkdreams_20:
(Start: 22 @17465 has 81 MA's), (25, 17516), (27, 17537), (30, 17549), (32, 17567), (44, 17642), (47, 17693), (54, 17768), (56, 17792), (64, 17870), (68, 17924), (70, 17936), (73, 17963), (85, 18008), (90, 18029),

Gene: CaiB_43 Start: 35959, Stop: 36537, Start Num: 22
Candidate Starts for CaiB_43:
(1, 35584), (10, 35770), (Start: 18 @35941 has 2 MA's), (Start: 22 @35959 has 81 MA's), (25, 36010), (30, 36043), (32, 36061), (34, 36076), (54, 36262), (56, 36286), (64, 36364), (70, 36430), (71, 36442), (90, 36523),

Gene: Caitlin_7 Start: 4193, Stop: 4873, Start Num: 21
Candidate Starts for Caitlin_7:
(13, 4070), (Start: 21 @4193 has 32 MA's), (23, 4208), (25, 4244), (41, 4349), (54, 4493), (56, 4508), (64, 4607), (65, 4619), (75, 4709), (94, 4784), (95, 4787), (100, 4847), (102, 4859),

Gene: CanesSauce_20 Start: 17501, Stop: 18097, Start Num: 22
Candidate Starts for CanesSauce_20:
(Start: 22 @17501 has 81 MA's), (25, 17552), (27, 17573), (30, 17585), (32, 17603), (44, 17678), (54, 17804), (56, 17828), (64, 17906), (72, 17987), (73, 17999), (82, 18032), (90, 18071), (96, 18092),

Gene: CaramelLatte_20 Start: 17501, Stop: 18097, Start Num: 22
Candidate Starts for CaramelLatte_20:
(Start: 22 @17501 has 81 MA's), (25, 17552), (27, 17573), (30, 17585), (32, 17603), (44, 17678), (54, 17804), (56, 17828), (64, 17906), (72, 17987), (73, 17999), (82, 18032), (90, 18071), (96, 18092),

Gene: Carsonalex_21 Start: 17886, Stop: 18464, Start Num: 21
Candidate Starts for Carsonalex_21:
(11, 17745), (Start: 21 @17886 has 32 MA's), (24, 17904), (33, 17979), (47, 18111), (51, 18177), (54, 18186), (64, 18279), (70, 18345), (73, 18372), (81, 18402), (90, 18438),

Gene: Chadwick_7 Start: 4240, Stop: 4944, Start Num: 19
Candidate Starts for Chadwick_7:
(15, 4180), (Start: 19 @4240 has 2 MA's), (Start: 21 @4264 has 32 MA's), (23, 4279), (25, 4315), (48, 4507), (54, 4564), (62, 4621), (64, 4672), (65, 4684), (102, 4930),

Gene: CheeseTouch_22 Start: 18676, Stop: 19209, Start Num: 22
Candidate Starts for CheeseTouch_22:
(17, 18643), (Start: 22 @18676 has 81 MA's), (25, 18727), (29, 18754), (32, 18769), (45, 18856), (46, 18865), (50, 18931), (51, 18958), (54, 18967), (62, 19024), (64, 19060), (66, 19078), (69, 19111),

Gene: CherryonLim_21 Start: 18254, Stop: 18841, Start Num: 22
Candidate Starts for CherryonLim_21:
(Start: 22 @18254 has 81 MA's), (28, 18329), (32, 18353), (45, 18443), (48, 18497), (54, 18554), (55, 18563), (56, 18578), (64, 18656),

Gene: ChickenTender_22 Start: 17893, Stop: 18471, Start Num: 21
Candidate Starts for ChickenTender_22:
(Start: 21 @17893 has 32 MA's), (33, 17986), (38, 18025), (40, 18037), (43, 18058), (47, 18118), (51, 18184), (54, 18193), (64, 18286), (70, 18352), (73, 18379), (74, 18382), (81, 18409), (90, 18445),

Gene: ChocoMunchkin_20 Start: 17501, Stop: 18097, Start Num: 22
Candidate Starts for ChocoMunchkin_20:
(Start: 22 @17501 has 81 MA's), (25, 17552), (27, 17573), (30, 17585), (32, 17603), (44, 17678), (54, 17804), (56, 17828), (64, 17906), (72, 17987), (73, 17999), (82, 18032), (90, 18071), (96, 18092),

Gene: Cleo_20 Start: 18119, Stop: 18682, Start Num: 22
Candidate Starts for Cleo_20:
(Start: 22 @18119 has 81 MA's), (28, 18194), (29, 18197), (33, 18212), (44, 18293), (47, 18344), (54, 18419), (64, 18512), (70, 18578), (74, 18608), (88, 18656),

Gene: CloverMinnie_43 Start: 35899, Stop: 36477, Start Num: 22
Candidate Starts for CloverMinnie_43:
(1, 35524), (10, 35710), (Start: 18 @35881 has 2 MA's), (Start: 22 @35899 has 81 MA's), (25, 35950), (30, 35983), (32, 36001), (34, 36016), (54, 36202), (56, 36226), (60, 36247), (64, 36304), (70, 36370), (71, 36382),

Gene: CocoaPuff_19 Start: 17499, Stop: 18086, Start Num: 22
Candidate Starts for CocoaPuff_19:
(Start: 22 @17499 has 81 MA's), (28, 17574), (32, 17598), (38, 17640), (45, 17688), (54, 17799), (56, 17823), (64, 17901), (81, 18024),

Gene: Cozz_20 Start: 17829, Stop: 18407, Start Num: 21
Candidate Starts for Cozz_20:
(11, 17688), (Start: 21 @17829 has 32 MA's), (24, 17847), (33, 17922), (47, 18054), (51, 18120), (54, 18129), (64, 18222), (65, 18234), (70, 18288), (73, 18315), (81, 18345), (90, 18381),

Gene: CyranoPS_4 Start: 2898, Stop: 3614, Start Num: 22
Candidate Starts for CyranoPS_4:
(Start: 22 @2898 has 81 MA's), (25, 2949), (31, 2985), (34, 3009), (46, 3090), (47, 3117), (48, 3135), (54, 3192), (62, 3249), (64, 3285), (79, 3405), (86, 3435), (89, 3447), (99, 3489), (101, 3549), (104, 3606),

Gene: Danforth_6 Start: 4175, Stop: 4855, Start Num: 21
Candidate Starts for Danforth_6:
(Start: 21 @4175 has 32 MA's), (23, 4190), (25, 4226), (41, 4331), (54, 4475), (56, 4490), (64, 4589), (65, 4601), (75, 4691), (94, 4766), (95, 4769), (102, 4841),

Gene: DearBasketball_23 Start: 17226, Stop: 17810, Start Num: 21

Candidate Starts for DearBasketball_23:
(2, 16863), (3, 16902), (5, 16929), (6, 16950), (Start: 21 @17226 has 32 MA's), (25, 17277), (29, 17304), (33, 17319), (34, 17331), (37, 17355), (40, 17370), (54, 17526), (57, 17550), (64, 17619), (92, 17781), (97, 17802),

Gene: DinoNuggs_21 Start: 17192, Stop: 17776, Start Num: 21
Candidate Starts for DinoNuggs_21:
(2, 16829), (3, 16868), (5, 16895), (6, 16916), (Start: 21 @17192 has 32 MA's), (25, 17243), (29, 17270), (33, 17285), (34, 17297), (37, 17321), (40, 17336), (54, 17492), (57, 17516), (64, 17585), (92, 17747), (97, 17768),

Gene: Dixon_7 Start: 4194, Stop: 4874, Start Num: 21
Candidate Starts for Dixon_7:
(13, 4071), (Start: 21 @4194 has 32 MA's), (23, 4209), (25, 4245), (41, 4350), (54, 4494), (56, 4509), (64, 4608), (65, 4620), (75, 4710), (94, 4785), (95, 4788), (102, 4860),

Gene: DonkeyMan_20 Start: 16981, Stop: 17565, Start Num: 21
Candidate Starts for DonkeyMan_20:
(5, 16684), (6, 16705), (Start: 21 @16981 has 32 MA's), (25, 17032), (29, 17059), (33, 17074), (34, 17086), (37, 17110), (40, 17125), (54, 17281), (57, 17305), (64, 17374), (87, 17515), (92, 17536), (97, 17557),

Gene: Dre3_20 Start: 18066, Stop: 18629, Start Num: 22
Candidate Starts for Dre3_20:
(Start: 22 @18066 has 81 MA's), (28, 18141), (29, 18144), (33, 18159), (44, 18240), (47, 18291), (54, 18366), (64, 18459), (70, 18525), (74, 18555), (88, 18603),

Gene: ElJefes_19 Start: 17977, Stop: 18564, Start Num: 22
Candidate Starts for ElJefes_19:
(Start: 22 @17977 has 81 MA's), (28, 18052), (32, 18076), (38, 18118), (45, 18166), (54, 18277), (55, 18286), (56, 18301), (64, 18379), (73, 18472),

Gene: Elinal_21 Start: 17498, Stop: 18085, Start Num: 22
Candidate Starts for Elinal_21:
(Start: 22 @17498 has 81 MA's), (28, 17573), (32, 17597), (45, 17687), (54, 17798), (56, 17822), (64, 17900), (81, 18023),

Gene: Eliott_20 Start: 17846, Stop: 18406, Start Num: 24
Candidate Starts for Eliott_20:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (65, 18233), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: Emalyn_19 Start: 17133, Stop: 17723, Start Num: 22
Candidate Starts for Emalyn_19:
(Start: 22 @17133 has 81 MA's), (25, 17184), (26, 17187), (27, 17205), (30, 17217), (32, 17235), (44, 17310), (47, 17361), (54, 17436), (56, 17460), (64, 17538), (68, 17592), (73, 17631), (90, 17697), (96, 17718),

Gene: Expelliarmus_6 Start: 4161, Stop: 4841, Start Num: 21
Candidate Starts for Expelliarmus_6:
(Start: 21 @4161 has 32 MA's), (23, 4176), (25, 4212), (41, 4317), (54, 4461), (56, 4476), (64, 4575), (65, 4587), (75, 4677), (94, 4752), (95, 4755), (102, 4827),

Gene: Feastonyeet_19 Start: 17545, Stop: 18132, Start Num: 22
Candidate Starts for Feastonyeet_19:
(Start: 22 @17545 has 81 MA's), (28, 17620), (32, 17644), (45, 17734), (54, 17845), (55, 17854), (56, 17869), (64, 17947), (73, 18040),

Gene: FelixTres_43 Start: 35962, Stop: 36540, Start Num: 22
Candidate Starts for FelixTres_43:
(1, 35587), (10, 35773), (Start: 18 @35944 has 2 MA's), (Start: 22 @35962 has 81 MA's), (25, 36013), (30, 36046), (32, 36064), (34, 36079), (54, 36265), (56, 36289), (60, 36310), (64, 36367), (70, 36433), (71, 36445),

Gene: Fribs8_21 Start: 18650, Stop: 19213, Start Num: 22
Candidate Starts for Fribs8_21:
(Start: 22 @18650 has 81 MA's), (28, 18725), (29, 18728), (33, 18743), (44, 18824), (54, 18950), (64, 19043), (70, 19109), (74, 19139), (88, 19187),

Gene: GTE2_18 Start: 17225, Stop: 17770, Start Num: 25
Candidate Starts for GTE2_18:
(Start: 22 @17174 has 81 MA's), (25, 17225), (30, 17258), (31, 17267), (32, 17276), (44, 17351), (47, 17402), (54, 17477), (56, 17501), (64, 17579), (68, 17633), (70, 17645), (72, 17660), (73, 17672), (90, 17744), (96, 17765),

Gene: Getalong_23 Start: 19482, Stop: 20015, Start Num: 22
Candidate Starts for Getalong_23:
(12, 19353), (20, 19464), (Start: 22 @19482 has 81 MA's), (25, 19533), (28, 19557), (29, 19560), (32, 19575), (45, 19662), (46, 19671), (50, 19737), (52, 19767), (54, 19773), (56, 19788), (59, 19806), (60, 19809), (62, 19830), (64, 19866), (66, 19884), (69, 19917), (90, 20001),

Gene: GiKK_23 Start: 17167, Stop: 17742, Start Num: 22
Candidate Starts for GiKK_23:
(Start: 22 @17167 has 81 MA's), (23, 17182), (25, 17218), (28, 17242), (34, 17275), (36, 17290), (37, 17299), (44, 17335), (47, 17386), (54, 17461), (64, 17563), (67, 17599), (68, 17617), (70, 17629), (78, 17671), (96, 17734),

Gene: Gibbous_20 Start: 18066, Stop: 18629, Start Num: 22
Candidate Starts for Gibbous_20:
(Start: 22 @18066 has 81 MA's), (28, 18141), (29, 18144), (33, 18159), (44, 18240), (47, 18291), (54, 18366), (64, 18459), (70, 18525), (74, 18555), (88, 18603),

Gene: GoldHunter_20 Start: 17829, Stop: 18407, Start Num: 21
Candidate Starts for GoldHunter_20:
(11, 17688), (Start: 21 @17829 has 32 MA's), (24, 17847), (33, 17922), (47, 18054), (51, 18120), (54, 18129), (64, 18222), (65, 18234), (70, 18288), (73, 18315), (81, 18345), (90, 18381),

Gene: Groundhog_6 Start: 4162, Stop: 4842, Start Num: 21
Candidate Starts for Groundhog_6:
(Start: 21 @4162 has 32 MA's), (23, 4177), (25, 4213), (41, 4318), (54, 4462), (56, 4477), (64, 4576), (65, 4588), (75, 4678), (94, 4753), (95, 4756), (102, 4828),

Gene: Heinz_20 Start: 17073, Stop: 17657, Start Num: 22
Candidate Starts for Heinz_20:
(Start: 22 @17073 has 81 MA's), (25, 17124), (33, 17166), (37, 17202), (53, 17370), (54, 17373), (64, 17466), (87, 17607), (92, 17628), (97, 17649), (98, 17652),

Gene: Hexbug_22 Start: 17853, Stop: 18434, Start Num: 22
Candidate Starts for Hexbug_22:
(4, 17529), (7, 17613), (9, 17658), (Start: 22 @17853 has 81 MA's), (28, 17928), (29, 17931), (33, 17946), (34, 17958), (35, 17970), (48, 18096), (49, 18111), (54, 18153), (55, 18162), (56, 18177), (58, 18192), (63, 18246), (64, 18255), (79, 18366), (96, 18426),

Gene: Hibiscus_20 Start: 17021, Stop: 17605, Start Num: 22
Candidate Starts for Hibiscus_20:
(Start: 22 @17021 has 81 MA's), (25, 17072), (33, 17114), (37, 17150), (53, 17318), (54, 17321), (64, 17414), (87, 17555), (92, 17576), (97, 17597), (98, 17600),

Gene: HippoPololi_22 Start: 18718, Stop: 19281, Start Num: 22
Candidate Starts for HippoPololi_22:
(Start: 22 @18718 has 81 MA's), (28, 18793), (29, 18796), (33, 18811), (44, 18892), (47, 18943), (54, 19018), (64, 19111), (74, 19207), (88, 19255),

Gene: Horseradish_21 Start: 17379, Stop: 17969, Start Num: 22
Candidate Starts for Horseradish_21:
(Start: 22 @17379 has 81 MA's), (25, 17430), (27, 17451), (30, 17463), (32, 17481), (47, 17607), (54, 17682), (56, 17706), (64, 17784), (68, 17838), (70, 17850), (73, 17877), (85, 17922), (90, 17943),

Gene: Jalloh_4 Start: 2897, Stop: 3613, Start Num: 22
Candidate Starts for Jalloh_4:
(Start: 22 @2897 has 81 MA's), (25, 2948), (34, 3008), (42, 3047), (46, 3089), (47, 3116), (48, 3134), (54, 3191), (62, 3248), (64, 3284), (79, 3404), (86, 3434), (89, 3446), (99, 3488), (101, 3548), (104, 3605),

Gene: Jamzy_23 Start: 17177, Stop: 17752, Start Num: 22
Candidate Starts for Jamzy_23:
(Start: 22 @17177 has 81 MA's), (23, 17192), (25, 17228), (28, 17252), (34, 17285), (36, 17300), (37, 17309), (44, 17345), (47, 17396), (54, 17471), (64, 17573), (67, 17609), (68, 17627), (70, 17639), (78, 17681), (96, 17744),

Gene: Jojo24_20 Start: 17018, Stop: 17602, Start Num: 22
Candidate Starts for Jojo24_20:
(Start: 22 @17018 has 81 MA's), (25, 17069), (33, 17111), (37, 17147), (54, 17318), (64, 17411), (87, 17552), (92, 17573), (97, 17594), (98, 17597),

Gene: JonJames_49 Start: 35611, Stop: 36183, Start Num: 22
Candidate Starts for JonJames_49:
(15, 35521), (16, 35557), (Start: 22 @35611 has 81 MA's), (25, 35662), (33, 35704), (37, 35740), (53, 35908), (54, 35911), (64, 36004), (68, 36058), (76, 36109), (81, 36127), (92, 36166),

Gene: KayGee_20 Start: 17498, Stop: 18085, Start Num: 22
Candidate Starts for KayGee_20:
(Start: 22 @17498 has 81 MA's), (28, 17573), (32, 17597), (45, 17687), (54, 17798), (56, 17822), (64, 17900), (81, 18023),

Gene: Kenna_21 Start: 18683, Stop: 19216, Start Num: 22
Candidate Starts for Kenna_21:
(17, 18650), (Start: 22 @18683 has 81 MA's), (25, 18734), (29, 18761), (32, 18776), (45, 18863), (46, 18872), (50, 18938), (51, 18965), (54, 18974), (62, 19031), (64, 19067), (66, 19085), (69, 19118),

Gene: Kuwabara_21 Start: 18109, Stop: 18642, Start Num: 22
Candidate Starts for Kuwabara_21:
(17, 18076), (Start: 22 @18109 has 81 MA's), (25, 18160), (29, 18187), (32, 18202), (45, 18289), (46, 18298), (50, 18364), (51, 18391), (54, 18400), (62, 18457), (64, 18493), (66, 18511), (69, 18544), (90, 18628),

Gene: Lauer_19 Start: 17547, Stop: 18134, Start Num: 22
Candidate Starts for Lauer_19:
(Start: 22 @17547 has 81 MA's), (28, 17622), (32, 17646), (45, 17736), (48, 17790), (54, 17847), (56, 17871), (64, 17949), (81, 18072),

Gene: Lutum_22 Start: 18683, Stop: 19216, Start Num: 22
Candidate Starts for Lutum_22:
(17, 18650), (Start: 22 @18683 has 81 MA's), (25, 18734), (29, 18761), (32, 18776), (45, 18863), (46, 18872), (50, 18938), (51, 18965), (54, 18974), (62, 19031), (64, 19067), (66, 19085), (69, 19118),

Gene: MAnor_20 Start: 17509, Stop: 18096, Start Num: 22
Candidate Starts for MAnor_20:
(Start: 22 @17509 has 81 MA's), (28, 17584), (32, 17608), (54, 17809), (55, 17818), (56, 17833), (64, 17911), (81, 18034),

Gene: MScarn_22 Start: 17468, Stop: 18058, Start Num: 22
Candidate Starts for MScarn_22:
(Start: 22 @17468 has 81 MA's), (25, 17519), (27, 17540), (30, 17552), (32, 17570), (44, 17645), (47, 17696), (54, 17771), (56, 17795), (64, 17873), (68, 17927), (70, 17939), (73, 17966), (85, 18011), (90, 18032),

Gene: MaVan_22 Start: 18806, Stop: 19369, Start Num: 22
Candidate Starts for MaVan_22:
(Start: 22 @18806 has 81 MA's), (28, 18881), (29, 18884), (33, 18899), (39, 18941), (47, 19031), (54, 19106), (64, 19199), (69, 19256), (93, 19364),

Gene: MakCheese_26 Start: 23097, Stop: 23636, Start Num: 22
Candidate Starts for MakCheese_26:
(Start: 22 @23097 has 81 MA's), (25, 23148), (29, 23175), (32, 23190), (45, 23277), (46, 23286), (54, 23388), (64, 23481), (77, 23574), (84, 23595),

Gene: MakoManhole_43 Start: 35977, Stop: 36555, Start Num: 22
Candidate Starts for MakoManhole_43:
(1, 35602), (10, 35788), (Start: 18 @35959 has 2 MA's), (Start: 22 @35977 has 81 MA's), (25, 36028), (30, 36061), (32, 36079), (34, 36094), (54, 36280), (56, 36304), (64, 36382), (70, 36448), (71, 36460),

Gene: Malvina_22 Start: 18721, Stop: 19284, Start Num: 22
Candidate Starts for Malvina_22:
(Start: 22 @18721 has 81 MA's), (28, 18796), (29, 18799), (33, 18814), (44, 18895), (47, 18946), (54, 19021), (64, 19114), (74, 19210), (88, 19258),

Gene: Margaret_23 Start: 17546, Stop: 18121, Start Num: 22
Candidate Starts for Margaret_23:
(Start: 22 @17546 has 81 MA's), (23, 17561), (25, 17597), (28, 17621), (34, 17654), (36, 17669), (37, 17678), (44, 17714), (47, 17765), (50, 17804), (54, 17840), (64, 17942), (67, 17978), (68, 17996), (70, 18008), (96, 18113),

Gene: Mayweather_21 Start: 18124, Stop: 18711, Start Num: 22
Candidate Starts for Mayweather_21:
(Start: 22 @18124 has 81 MA's), (28, 18199), (32, 18223), (45, 18313), (54, 18424), (55, 18433), (56, 18448), (64, 18526), (81, 18649),

Gene: McDazzle_19 Start: 17971, Stop: 18558, Start Num: 22
Candidate Starts for McDazzle_19:
(Start: 22 @17971 has 81 MA's), (28, 18046), (32, 18070), (38, 18112), (45, 18160), (54, 18271), (55, 18280), (56, 18295), (64, 18373), (73, 18466),

Gene: MortyNRick_21 Start: 18415, Stop: 18948, Start Num: 22
Candidate Starts for MortyNRick_21:
(17, 18382), (Start: 22 @18415 has 81 MA's), (25, 18466), (29, 18493), (32, 18508), (45, 18595), (46, 18604), (50, 18670), (51, 18697), (54, 18706), (62, 18763), (64, 18799), (66, 18817), (69, 18850), (90, 18934),

Gene: MossRose_43 Start: 35938, Stop: 36534, Start Num: 18
Candidate Starts for MossRose_43:
(1, 35581), (10, 35767), (Start: 18 @35938 has 2 MA's), (Start: 22 @35956 has 81 MA's), (25, 36007), (30, 36040), (32, 36058), (34, 36073), (54, 36259), (56, 36283), (64, 36361), (70, 36427), (71, 36439),

Gene: MunkgeeRoachy_20 Start: 17876, Stop: 18454, Start Num: 21
Candidate Starts for MunkgeeRoachy_20:
(Start: 21 @17876 has 32 MA's), (24, 17894), (33, 17969), (47, 18101), (51, 18167), (54, 18176), (64, 18269), (70, 18335), (73, 18362), (81, 18392), (90, 18428),

Gene: NHagos_41 Start: 34560, Stop: 35138, Start Num: 22
Candidate Starts for NHagos_41:
(Start: 18 @34542 has 2 MA's), (Start: 22 @34560 has 81 MA's), (25, 34611), (32, 34662), (34, 34677), (54, 34863), (56, 34887), (64, 34965), (70, 35031), (90, 35124),

Gene: Naca_6 Start: 4378, Stop: 5058, Start Num: 21
Candidate Starts for Naca_6:
(15, 4291), (Start: 21 @4378 has 32 MA's), (23, 4393), (25, 4429), (48, 4621), (54, 4678), (62, 4735), (64, 4786), (65, 4798), (102, 5044),

Gene: NearlyHeadless_7 Start: 4201, Stop: 4878, Start Num: 21
Candidate Starts for NearlyHeadless_7:
(Start: 21 @4201 has 32 MA's), (23, 4216), (25, 4252), (41, 4357), (54, 4501), (56, 4516), (64, 4615), (65, 4627), (95, 4792), (102, 4864),

Gene: Nibbles_22 Start: 18806, Stop: 19369, Start Num: 22
Candidate Starts for Nibbles_22:
(Start: 22 @18806 has 81 MA's), (28, 18881), (29, 18884), (33, 18899), (39, 18941), (47, 19031), (54, 19106), (64, 19199), (69, 19256), (93, 19364),

Gene: Nina_21 Start: 18870, Stop: 19448, Start Num: 21
Candidate Starts for Nina_21:
(11, 18729), (Start: 21 @18870 has 32 MA's), (24, 18888), (33, 18963), (47, 19095), (51, 19161), (54, 19170), (64, 19263), (70, 19329), (73, 19356), (81, 19386), (90, 19422),

Gene: Nodigi_22 Start: 17832, Stop: 18413, Start Num: 22

Candidate Starts for Nodigi_22:
(4, 17508), (7, 17592), (8, 17610), (9, 17637), (Start: 22 @17832 has 81 MA's), (28, 17907), (29, 17910), (33, 17925), (34, 17937), (35, 17949), (48, 18075), (49, 18090), (54, 18132), (55, 18141), (56, 18156), (58, 18171), (63, 18225), (64, 18234), (79, 18345), (96, 18405),

Gene: Orla_22 Start: 17836, Stop: 18417, Start Num: 22
Candidate Starts for Orla_22:
(Start: 22 @17836 has 81 MA's), (29, 17914), (33, 17929), (34, 17941), (35, 17953), (49, 18094), (54, 18136), (55, 18145), (56, 18160), (58, 18175), (63, 18229), (64, 18238), (79, 18349), (96, 18409),

Gene: Periwinkle_24 Start: 19149, Stop: 19682, Start Num: 22
Candidate Starts for Periwinkle_24:
(20, 19131), (Start: 22 @19149 has 81 MA's), (25, 19200), (28, 19224), (29, 19227), (32, 19242), (38, 19284), (45, 19329), (46, 19338), (50, 19404), (52, 19434), (54, 19440), (56, 19455), (59, 19473), (60, 19476), (62, 19497), (64, 19533), (66, 19551), (69, 19584),

Gene: PetterN_7 Start: 4265, Stop: 4945, Start Num: 21
Candidate Starts for PetterN_7:
(15, 4181), (Start: 19 @4241 has 2 MA's), (Start: 21 @4265 has 32 MA's), (23, 4280), (25, 4316), (48, 4508), (54, 4565), (62, 4622), (64, 4673), (65, 4685), (102, 4931),

Gene: Phillis_7 Start: 4159, Stop: 4836, Start Num: 21
Candidate Starts for Phillis_7:
(Start: 21 @4159 has 32 MA's), (25, 4210), (41, 4315), (54, 4459), (56, 4474), (64, 4573), (65, 4585), (94, 4747), (95, 4750), (102, 4822),

Gene: Pons_20 Start: 17499, Stop: 18086, Start Num: 22
Candidate Starts for Pons_20:
(Start: 22 @17499 has 81 MA's), (28, 17574), (32, 17598), (45, 17688), (54, 17799), (55, 17808), (56, 17823), (64, 17901), (73, 17994),

Gene: PotPie_20 Start: 18364, Stop: 18951, Start Num: 22
Candidate Starts for PotPie_20:
(Start: 22 @18364 has 81 MA's), (28, 18439), (32, 18463), (38, 18505), (45, 18553), (54, 18664), (55, 18673), (56, 18688), (64, 18766), (81, 18889),

Gene: PsychoKiller_20 Start: 17846, Stop: 18406, Start Num: 24
Candidate Starts for PsychoKiller_20:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (65, 18233), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: Quasar_20 Start: 18437, Stop: 19015, Start Num: 21
Candidate Starts for Quasar_20:
(11, 18296), (Start: 21 @18437 has 32 MA's), (24, 18455), (33, 18530), (47, 18662), (51, 18728), (54, 18737), (64, 18830), (65, 18842), (70, 18896), (73, 18923), (81, 18953), (90, 18989),

Gene: RADical_21 Start: 17847, Stop: 18407, Start Num: 24
Candidate Starts for RADical_21:
(11, 17688), (Start: 21 @17829 has 32 MA's), (24, 17847), (33, 17922), (47, 18054), (51, 18120), (54, 18129), (64, 18222), (65, 18234), (70, 18288), (73, 18315), (81, 18345), (90, 18381),

Gene: RSchmailzl_21 Start: 17972, Stop: 18550, Start Num: 21
Candidate Starts for RSchmailzl_21:

(11, 17831), (Start: 21 @17972 has 32 MA's), (24, 17990), (33, 18065), (47, 18197), (51, 18263), (54, 18272), (64, 18365), (70, 18431), (73, 18458), (81, 18488), (90, 18524),

Gene: RanchParmCat_23 Start: 17546, Stop: 18121, Start Num: 22
Candidate Starts for RanchParmCat_23:
(Start: 22 @17546 has 81 MA's), (23, 17561), (25, 17597), (27, 17618), (28, 17621), (34, 17654), (36, 17669), (37, 17678), (44, 17714), (47, 17765), (50, 17804), (54, 17840), (64, 17942), (67, 17978), (68, 17996), (70, 18008), (96, 18113),

Gene: RedBaron_22 Start: 17872, Stop: 18450, Start Num: 21
Candidate Starts for RedBaron_22:
(Start: 21 @17872 has 32 MA's), (24, 17890), (33, 17965), (47, 18097), (51, 18163), (54, 18172), (64, 18265), (70, 18331), (73, 18358), (81, 18388), (90, 18424),

Gene: Reyja_21 Start: 17192, Stop: 17776, Start Num: 21
Candidate Starts for Reyja_21:
(2, 16829), (3, 16868), (5, 16895), (6, 16916), (Start: 21 @17192 has 32 MA's), (25, 17243), (29, 17270), (33, 17285), (34, 17297), (37, 17321), (40, 17336), (54, 17492), (57, 17516), (64, 17585), (92, 17747), (97, 17768),

Gene: Roary_7 Start: 4160, Stop: 4840, Start Num: 21
Candidate Starts for Roary_7:
(Start: 21 @4160 has 32 MA's), (23, 4175), (25, 4211), (41, 4316), (54, 4460), (56, 4475), (64, 4574), (65, 4586), (94, 4751), (95, 4754), (102, 4826),

Gene: Saintus_7 Start: 4176, Stop: 4853, Start Num: 21
Candidate Starts for Saintus_7:
(Start: 21 @4176 has 32 MA's), (23, 4191), (25, 4227), (41, 4332), (54, 4476), (56, 4491), (64, 4590), (65, 4602), (95, 4767), (102, 4839),

Gene: Santhid_20 Start: 17026, Stop: 17610, Start Num: 22
Candidate Starts for Santhid_20:
(Start: 22 @17026 has 81 MA's), (25, 17077), (33, 17119), (37, 17155), (54, 17326), (64, 17419), (87, 17560), (92, 17581), (97, 17602),

Gene: Scorpia_7 Start: 4242, Stop: 4946, Start Num: 19
Candidate Starts for Scorpia_7:
(15, 4182), (Start: 19 @4242 has 2 MA's), (Start: 21 @4266 has 32 MA's), (23, 4281), (25, 4317), (48, 4509), (54, 4566), (62, 4623), (64, 4674), (65, 4686), (102, 4932),

Gene: ShawBrad_22 Start: 18692, Stop: 19225, Start Num: 22
Candidate Starts for ShawBrad_22:
(14, 18590), (20, 18674), (Start: 22 @18692 has 81 MA's), (25, 18743), (28, 18767), (29, 18770), (32, 18785), (38, 18827), (45, 18872), (46, 18881), (50, 18947), (52, 18977), (54, 18983), (56, 18998), (59, 19016), (60, 19019), (62, 19040), (64, 19076), (66, 19094), (69, 19127),

Gene: SheckWes_19 Start: 17499, Stop: 18086, Start Num: 22
Candidate Starts for SheckWes_19:
(Start: 22 @17499 has 81 MA's), (28, 17574), (32, 17598), (38, 17640), (45, 17688), (54, 17799), (55, 17808), (56, 17823), (64, 17901), (73, 17994),

Gene: SketchMex_19 Start: 17483, Stop: 18073, Start Num: 22
Candidate Starts for SketchMex_19:

(Start: 22 @17483 has 81 MA's), (25, 17534), (27, 17555), (30, 17567), (32, 17585), (44, 17660), (47, 17711), (54, 17786), (56, 17810), (64, 17888), (68, 17942), (70, 17954), (73, 17981), (85, 18026), (90, 18047),

Gene: Smeadley_7 Start: 4193, Stop: 4873, Start Num: 21
Candidate Starts for Smeadley_7:
(13, 4070), (Start: 21 @4193 has 32 MA's), (23, 4208), (25, 4244), (41, 4349), (54, 4493), (56, 4508), (64, 4607), (65, 4619), (75, 4709), (94, 4784), (95, 4787), (100, 4847), (102, 4859),

Gene: Socotra_21 Start: 17828, Stop: 18406, Start Num: 21
Candidate Starts for Socotra_21:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (65, 18233), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: Sopespian_20 Start: 17829, Stop: 18407, Start Num: 21
Candidate Starts for Sopespian_20:
(11, 17688), (Start: 21 @17829 has 32 MA's), (24, 17847), (33, 17922), (47, 18054), (51, 18120), (54, 18129), (64, 18222), (65, 18234), (70, 18288), (73, 18315), (81, 18345), (90, 18381),

Gene: Sprinklemunch_24 Start: 23347, Stop: 23886, Start Num: 22
Candidate Starts for Sprinklemunch_24:
(Start: 22 @23347 has 81 MA's), (25, 23398), (29, 23425), (32, 23440), (45, 23527), (46, 23536), (54, 23638), (64, 23731), (84, 23845),

Gene: Starburst_21 Start: 17846, Stop: 18406, Start Num: 24
Candidate Starts for Starburst_21:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (65, 18233), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: SteamedHams_22 Start: 17501, Stop: 18097, Start Num: 22
Candidate Starts for SteamedHams_22:
(Start: 22 @17501 has 81 MA's), (25, 17552), (27, 17573), (30, 17585), (32, 17603), (44, 17678), (54, 17804), (56, 17828), (64, 17906), (72, 17987), (73, 17999), (82, 18032), (90, 18071), (96, 18092),

Gene: Stephig9_7 Start: 4161, Stop: 4841, Start Num: 21
Candidate Starts for Stephig9_7:
(Start: 21 @4161 has 32 MA's), (23, 4176), (25, 4212), (41, 4317), (54, 4461), (56, 4476), (64, 4575), (65, 4587), (75, 4677), (94, 4752), (95, 4755), (102, 4827),

Gene: SummitAcademy_19 Start: 17579, Stop: 18166, Start Num: 22
Candidate Starts for SummitAcademy_19:
(Start: 22 @17579 has 81 MA's), (28, 17654), (32, 17678), (38, 17720), (45, 17768), (54, 17879), (55, 17888), (56, 17903), (64, 17981), (81, 18104),

Gene: Survivors_22 Start: 18655, Stop: 19218, Start Num: 22
Candidate Starts for Survivors_22:
(Start: 22 @18655 has 81 MA's), (28, 18730), (29, 18733), (33, 18748), (39, 18790), (47, 18880), (54, 18955), (64, 19048), (69, 19105), (93, 19213),

Gene: SweatNTears_22 Start: 17994, Stop: 18584, Start Num: 22
Candidate Starts for SweatNTears_22:
(Start: 22 @17994 has 81 MA's), (25, 18045), (27, 18066), (30, 18078), (32, 18096), (44, 18171), (47, 18222), (54, 18297), (56, 18321), (64, 18399), (68, 18453), (70, 18465), (73, 18492), (85, 18537), (90,

18558),

Gene: TailX7_4 Start: 2898, Stop: 3614, Start Num: 22
Candidate Starts for TailX7_4:
(Start: 22 @2898 has 81 MA's), (25, 2949), (34, 3009), (42, 3048), (46, 3090), (47, 3117), (48, 3135), (54, 3192), (62, 3249), (64, 3285), (79, 3405), (86, 3435), (89, 3447), (99, 3489), (100, 3540), (101, 3549), (103, 3579), (104, 3606),

Gene: Tarnish_20 Start: 17869, Stop: 18456, Start Num: 22
Candidate Starts for Tarnish_20:
(Start: 22 @17869 has 81 MA's), (28, 17944), (32, 17968), (45, 18058), (54, 18169), (55, 18178), (56, 18193), (64, 18271), (73, 18364),

Gene: Tarzan_20 Start: 16995, Stop: 17579, Start Num: 21
Candidate Starts for Tarzan_20:
(5, 16698), (6, 16719), (Start: 21 @16995 has 32 MA's), (25, 17046), (29, 17073), (33, 17088), (34, 17100), (37, 17124), (40, 17139), (54, 17295), (57, 17319), (64, 17388), (87, 17529), (92, 17550), (97, 17571),

Gene: Toil_31 Start: 15291, Stop: 15974, Start Num: 22
Candidate Starts for Toil_31:
(Start: 22 @15291 has 81 MA's), (25, 15342), (29, 15369), (41, 15447), (44, 15468), (46, 15489), (48, 15534), (50, 15555), (54, 15591), (64, 15684), (65, 15696), (80, 15807), (83, 15819), (91, 15855),

Gene: Tolls_22 Start: 17504, Stop: 18100, Start Num: 22
Candidate Starts for Tolls_22:
(Start: 22 @17504 has 81 MA's), (25, 17555), (27, 17576), (32, 17606), (44, 17681), (54, 17807), (56, 17831), (64, 17909), (72, 17990), (73, 18002), (82, 18035), (90, 18074), (96, 18095),

Gene: TraderJ_43 Start: 35970, Stop: 36566, Start Num: 18
Candidate Starts for TraderJ_43:
(1, 35613), (Start: 18 @35970 has 2 MA's), (Start: 22 @35988 has 81 MA's), (25, 36039), (30, 36072), (32, 36090), (34, 36105), (54, 36291), (56, 36315), (64, 36393), (70, 36459), (71, 36471),

Gene: Troje_20 Start: 17465, Stop: 18055, Start Num: 22
Candidate Starts for Troje_20:
(Start: 22 @17465 has 81 MA's), (25, 17516), (27, 17537), (30, 17549), (32, 17567), (44, 17642), (47, 17693), (54, 17768), (56, 17792), (64, 17870), (68, 17924), (70, 17936), (73, 17963), (85, 18008), (90, 18029),

Gene: Typhonomachy_20 Start: 17828, Stop: 18406, Start Num: 21
Candidate Starts for Typhonomachy_20:
(11, 17687), (Start: 21 @17828 has 32 MA's), (24, 17846), (33, 17921), (47, 18053), (51, 18119), (54, 18128), (64, 18221), (70, 18287), (73, 18314), (81, 18344), (90, 18380),

Gene: UnionJack_7 Start: 4229, Stop: 4894, Start Num: 21
Candidate Starts for UnionJack_7:
(Start: 21 @4229 has 32 MA's), (23, 4244), (25, 4280), (54, 4529), (60, 4565), (62, 4586), (64, 4637), (65, 4649), (102, 4880),

Gene: Vine_21 Start: 18511, Stop: 19098, Start Num: 22
Candidate Starts for Vine_21:

(Start: 22 @18511 has 81 MA's), (28, 18586), (32, 18610), (54, 18811), (56, 18835), (64, 18913), (81, 19036),

Gene: Wallaby_24 Start: 18874, Stop: 19362, Start Num: 28
Candidate Starts for Wallaby_24:
(Start: 22 @18799 has 81 MA's), (28, 18874), (29, 18877), (33, 18892), (39, 18934), (47, 19024), (54, 19099), (64, 19192), (69, 19249), (93, 19357),

Gene: Wolfwood_22 Start: 18799, Stop: 19362, Start Num: 22
Candidate Starts for Wolfwood_22:
(Start: 22 @18799 has 81 MA's), (28, 18874), (29, 18877), (33, 18892), (39, 18934), (47, 19024), (54, 19099), (61, 19141), (64, 19192), (69, 19249), (93, 19357),

Gene: Wooper_43 Start: 35976, Stop: 36572, Start Num: 18
Candidate Starts for Wooper_43:
(1, 35619), (Start: 18 @35976 has 2 MA's), (Start: 22 @35994 has 81 MA's), (25, 36045), (30, 36078), (32, 36096), (34, 36111), (54, 36297), (56, 36321), (64, 36399), (70, 36465), (71, 36477),

Gene: Yakult_21 Start: 17400, Stop: 17975, Start Num: 22
Candidate Starts for Yakult_21:
(Start: 22 @17400 has 81 MA's), (25, 17451), (28, 17475), (34, 17508), (37, 17532), (44, 17568), (47, 17619), (50, 17658), (54, 17694), (64, 17796), (67, 17832), (70, 17862), (96, 17967),

Gene: Yarn_19 Start: 17494, Stop: 18090, Start Num: 22
Candidate Starts for Yarn_19:
(Start: 22 @17494 has 81 MA's), (25, 17545), (27, 17566), (30, 17578), (32, 17596), (44, 17671), (54, 17797), (56, 17821), (64, 17899), (72, 17980), (73, 17992), (82, 18025), (90, 18064), (96, 18085),

Gene: Yeshua_43 Start: 35971, Stop: 36549, Start Num: 22
Candidate Starts for Yeshua_43:
(1, 35596), (Start: 18 @35953 has 2 MA's), (Start: 22 @35971 has 81 MA's), (25, 36022), (30, 36055), (32, 36073), (34, 36088), (54, 36274), (56, 36298), (64, 36376), (70, 36442), (71, 36454),

Gene: Yucky_20 Start: 18370, Stop: 18957, Start Num: 22
Candidate Starts for Yucky_20:
(Start: 22 @18370 has 81 MA's), (28, 18445), (32, 18469), (45, 18559), (54, 18670), (56, 18694), (64, 18772), (81, 18895),

Gene: Yummy_21 Start: 17379, Stop: 17969, Start Num: 22
Candidate Starts for Yummy_21:
(Start: 22 @17379 has 81 MA's), (25, 17430), (27, 17451), (30, 17463), (32, 17481), (47, 17607), (54, 17682), (56, 17706), (64, 17784), (68, 17838), (70, 17850), (73, 17877), (85, 17922), (90, 17943),

Gene: Yvonnetastic_47 Start: 33146, Stop: 33718, Start Num: 22
Candidate Starts for Yvonnetastic_47:
(15, 33056), (16, 33092), (Start: 22 @33146 has 81 MA's), (25, 33197), (33, 33239), (37, 33275), (53, 33443), (54, 33446), (64, 33539), (68, 33593), (76, 33644), (81, 33662), (92, 33701),

Gene: Zareef_22 Start: 18807, Stop: 19370, Start Num: 22
Candidate Starts for Zareef_22:
(Start: 22 @18807 has 81 MA's), (28, 18882), (29, 18885), (33, 18900), (39, 18942), (47, 19032), (54, 19107), (64, 19200), (69, 19257), (93, 19365),

Gene: Zodiariah_24 Start: 23393, Stop: 23932, Start Num: 22
Candidate Starts for Zodiariah_24:
(Start: 22 @23393 has 81 MA's), (25, 23444), (27, 23465), (28, 23468), (32, 23486), (45, 23573), (46, 23582), (54, 23684), (64, 23777), (84, 23891),