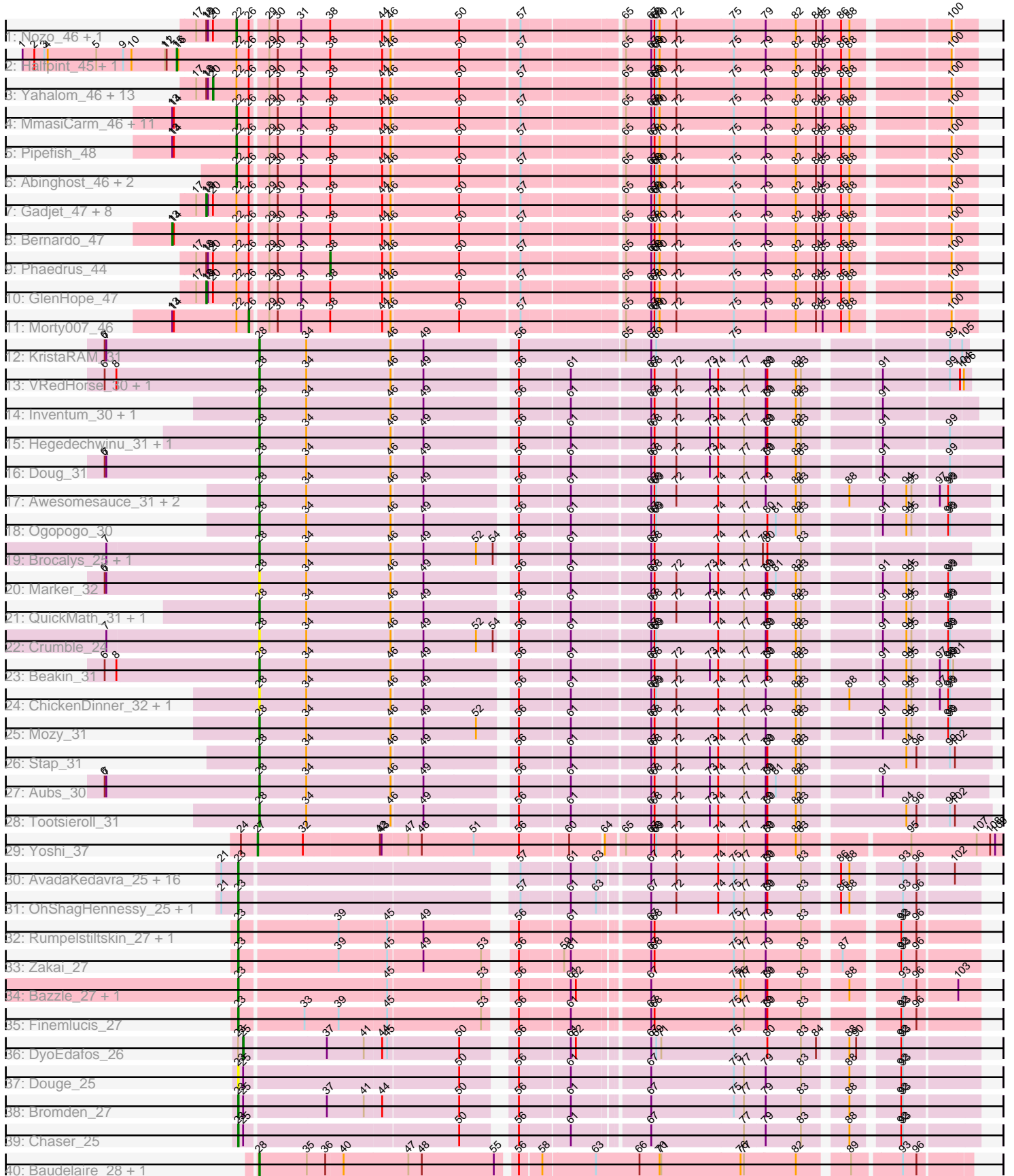


Pham 159100



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 159100 Report

This analysis was run 04/28/24 on database version 559.

Pham number 159100 has 104 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Nozo_46, ChaChing_46
- Track 2 : Halfpint_45, Kamiyu_46
- Track 3 : Yahalom_46, Chandler_46, Daisy_46, Deenasa_46, RomaT_46, Phlyer_46, Yinz_46, Corofin_46, Akoma_46, Heathcliff_46, SynergyX_46, RagingRooster_46, Tydolla_46, Kronus_45
- Track 4 : MmasiCarm_46, Phayeta_47, Mortcellus_45, Devonte_46, Casbah_45, Rita1961_46, Obutu_46, Gervas_46, LestyG_46, Ben11_45, Marley1013_46, SlippinJimmy_46
- Track 5 : Pipefish_48
- Track 6 : Abinghost_46, Baloo_46, Audrey_46
- Track 7 : Gadjet_47, Neos5_46, OrangeOswald_46, Athena_47, Jackstina_43, HarveySr_46, Philly_45, Compostia_47, Briakila_47
- Track 8 : Bernardo_47
- Track 9 : Phaedrus_44
- Track 10 : GlenHope_47
- Track 11 : Morty007_46
- Track 12 : KristaRAM_31
- Track 13 : VRedHorse_30, Cornucopia_31
- Track 14 : Inventum_30, Sassafras_30
- Track 15 : Hegedechwinu_31, Juice456_31
- Track 16 : Doug_31
- Track 17 : Awesomesauce_31, Misha28_31, TootsiePop_31
- Track 18 : Ogopogo_30
- Track 19 : Brocalys_25, Pippy_24
- Track 20 : Marker_32
- Track 21 : QuickMath_31, Kimberlium_32
- Track 22 : Crumble_24
- Track 23 : Beakin_31
- Track 24 : ChickenDinner_32, DocMcStuffins_31
- Track 25 : Mozy_31
- Track 26 : Stap_31
- Track 27 : Aubs_30
- Track 28 : Tootsieroll_31
- Track 29 : Yoshi_37
- Track 30 : AvadaKedavra_25, Calm_25, Tyson_25, CicholasNage_25, Halena_25, Wyatt2_25, Wamburggrxpress_25, MAckerman_25, Zaria_25, Acquire49_25, Appletree2_25, UPIE_25, Enceladus_25, DirkDirk_25, Rose5_25, Silverleaf_25,

LeBron_25

- Track 31 : OhShagHennessy_25, JoeDirt_25
- Track 32 : Rumpelstiltskin_27, Gabriela_27
- Track 33 : Zakai_27
- Track 34 : Bazzle_27, Archie_27
- Track 35 : Finemlucis_27
- Track 36 : DyoEdafos_26
- Track 37 : Douge_25
- Track 38 : Bromden_27
- Track 39 : Chaser_25
- Track 40 : Baudelaire_28, Aegeus_28

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

The start number called the most often in the published annotations is 23, it was called in 26 of the 95 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49_25, Appletree2_25, Archie_27, AvadaKedavra_25, Bazzle_27, Bromden_27, Calm_25, Chaser_25, CicholasNage_25, DirkDirk_25, Douge_25, Enceladus_25, Finemlucis_27, Gabriela_27, Halena_25, JoeDirt_25, LeBron_25, MAckerman_25, OhShagHennessy_25, Rose5_25, Rumpelstiltskin_27, Silverleaf_25, Tyson_25, UPIE_25, Wamburggrxpress_25, Wyatt2_25, Zakai_27, Zaria_25,

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

- DyoEdafos_26,

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

- Abinghost_46, Aegeus_28, Akoma_46, Athena_47, Aubs_30, Audrey_46, Awesomesauce_31, Baloo_46, Baudelaire_28, Beakin_31, Ben11_45, Bernardo_47, Briakila_47, Brocalys_25, Casbah_45, ChaChing_46, Chandler_46, ChickenDinner_32, Compostia_47, Cornucopia_31, Corofin_46, Crumble_24, Daisy_46, Deenasa_46, Devonte_46, DocMcStuffins_31, Doug_31, Gadget_47, Gervas_46, GlenHope_47, Halfpint_45, HarveySr_46, Heathcliff_46, Hegedechwinu_31, Inventum_30, Jackstina_43, Juice456_31, Kamiyu_46, Kimberlium_32, KristaRAM_31, Kronus_45, LestyG_46, Marker_32, Marley1013_46, Misha28_31, MmasiCarm_46, Mortcellus_45, Morty007_46, Mozy_31, Neos5_46, Nozo_46, Obutu_46, Ogopogo_30, OrangeOswald_46, Phaedrus_44, Phayeta_47, Philly_45, Phlyer_46, Pipefish_48, Pippy_24, QuickMath_31, RagingRooster_46, Rita1961_46, RomaT_46, Sassafras_30, SlippinJimmy_46, Stap_31, SynergyX_46, TootsiePop_31, Tootsieroll_31, Tydolla_46, VRedHorse_30, Yahalom_46, Yinz_46, Yoshi_37,

Summary by start number:

Start 13:

- Found in 15 of 104 (14.4%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 6.7% of time when present

- Phage (with cluster) where this start called: Bernardo_47 (B3),

Start 15:

- Found in 2 of 104 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Halfpint_45 (B3), Kamiyu_46 (B3),

Start 18:

- Found in 27 of 104 (26.0%) of genes in pham
- Manual Annotations of this start: 10 of 95
- Called 37.0% of time when present
- Phage (with cluster) where this start called: Athena_47 (B3), Briakila_47 (B3), Compostia_47 (B3), Gadget_47 (B3), GlenHope_47 (B3), HarveySr_46 (B3), Jackstina_43 (B3), Neos5_46 (B3), OrangeOswald_46 (B3), Philly_45 (B3),

Start 20:

- Found in 27 of 104 (26.0%) of genes in pham
- Manual Annotations of this start: 14 of 95
- Called 51.9% of time when present
- Phage (with cluster) where this start called: Akoma_46 (B3), Chandler_46 (B3), Corofin_46 (B3), Daisy_46 (B3), Deenasa_46 (B3), Heathcliff_46 (B3), Kronus_45 (B3), Phlyer_46 (B3), RagingRooster_46 (B3), RomaT_46 (B3), SynergyX_46 (B3), Tydolla_46 (B3), Yahalom_46 (B3), Yinz_46 (B3),

Start 22:

- Found in 47 of 104 (45.2%) of genes in pham
- Manual Annotations of this start: 16 of 95
- Called 38.3% of time when present
- Phage (with cluster) where this start called: Abinghost_46 (B3), Audrey_46 (B3), Baloo_46 (B3), Ben11_45 (B3), Casbah_45 (B3), ChaChing_46 (B3), Devonte_46 (B3), Gervas_46 (B3), LestyG_46 (B3), Marley1013_46 (B3), MmasiCarm_46 (B3), Mortcellus_45 (B3), Nozo_46 (B3), Obutu_46 (B3), Phayeta_47 (B3), Pipefish_48 (B3), Rita1961_46 (B3), SlippinJimmy_46 (B3),

Start 23:

- Found in 29 of 104 (27.9%) of genes in pham
- Manual Annotations of this start: 26 of 95
- Called 96.6% of time when present
- Phage (with cluster) where this start called: Acquire49_25 (L1), Appletree2_25 (L1), Archie_27 (L2), AvadaKedavra_25 (L1), Bazzle_27 (L2), Bromden_27 (L4), Calm_25 (L1), Chaser_25 (L4), CicholasNage_25 (L1), DirkDirk_25 (L1), Douge_25 (L4), Enceladus_25 (L1), Finemlucis_27 (L2), Gabriela_27 (L2), Halena_25 (L1), JoeDirt_25 (L1), LeBron_25 (L1), MAckerman_25 (L1), OhShagHennessy_25 (L1), Rose5_25 (L1), Rumpelstiltskin_27 (L2), Silverleaf_25 (L1), Tyson_25 (L1), UPIE_25 (L1), Wamburgrxpress_25 (L1), Wyatt2_25 (L1), Zakai_27 (L2), Zaria_25 (L1),

Start 25:

- Found in 4 of 104 (3.8%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 25.0% of time when present
- Phage (with cluster) where this start called: DyoEdafos_26 (L4),

Start 26:

- Found in 47 of 104 (45.2%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 2.1% of time when present
- Phage (with cluster) where this start called: Morty007_46 (B3),

Start 27:

- Found in 1 of 104 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yoshi_37 (F2),

Start 28:

- Found in 27 of 104 (26.0%) of genes in pham
- Manual Annotations of this start: 23 of 95
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aegeus_28 (L5), Aubs_30 (F1), Awesomesauce_31 (F1), Baudelaire_28 (L5), Beakin_31 (F1), Brocalys_25 (F1), ChickenDinner_32 (F1), Cornucopia_31 (F1), Crumble_24 (F1), DocMcStuffins_31 (F1), Doug_31 (F1), Hegedechwinu_31 (F1), Inventum_30 (F1), Juice456_31 (F1), Kimberlium_32 (F1), KristaRAM_31 (F1), Marker_32 (F1), Misha28_31 (F1), Mozy_31 (F1), Ogopogo_30 (F1), Pippy_24 (F1), QuickMath_31 (F1), Sassafras_30 (F1), Stap_31 (F1), TootsiePop_31 (F1), Tootsieroll_31 (F1), VRedHorse_30 (F1),

Start 38:

- Found in 47 of 104 (45.2%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 2.1% of time when present
- Phage (with cluster) where this start called: Phaedrus_44 (B3),

Summary by clusters:

There are 7 clusters represented in this pham: F1, F2, B3, L4, L5, L2, L1,

Info for manual annotations of cluster B3:

- Start number 13 was manually annotated 1 time for cluster B3.
- Start number 15 was manually annotated 1 time for cluster B3.
- Start number 18 was manually annotated 10 times for cluster B3.
- Start number 20 was manually annotated 14 times for cluster B3.
- Start number 22 was manually annotated 16 times for cluster B3.
- Start number 26 was manually annotated 1 time for cluster B3.
- Start number 38 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster F1:

- Start number 28 was manually annotated 21 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 27 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster L1:

- Start number 23 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 23 was manually annotated 6 times for cluster L2.

Info for manual annotations of cluster L4:

- Start number 23 was manually annotated 2 times for cluster L4.
- Start number 25 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster L5:

- Start number 28 was manually annotated 2 times for cluster L5.

Gene Information:

Gene: Abinghost_46 Start: 40308, Stop: 41531, Start Num: 22

Candidate Starts for Abinghost_46:

(Start: 22 @40308 has 16 MA's), (Start: 26 @40329 has 1 MA's), (29, 40356), (30, 40371), (31, 40413), (Start: 38 @40464 has 1 MA's), (44, 40554), (46, 40569), (50, 40683), (57, 40785), (65, 40947), (67, 40992), (68, 40998), (69, 41001), (70, 41007), (72, 41037), (75, 41139), (79, 41196), (82, 41247), (84, 41283), (85, 41295), (86, 41328), (88, 41343), (100, 41493),

Gene: Acquire49_25 Start: 24375, Stop: 25547, Start Num: 23

Candidate Starts for Acquire49_25:

(21, 24345), (Start: 23 @24375 has 26 MA's), (57, 24822), (61, 24900), (63, 24945), (67, 25020), (72, 25065), (74, 25140), (75, 25167), (77, 25185), (79, 25221), (80, 25224), (83, 25284), (86, 25335), (88, 25350), (93, 25419), (96, 25443), (102, 25503),

Gene: Aegeus_28 Start: 24440, Stop: 25621, Start Num: 28

Candidate Starts for Aegeus_28:

(Start: 28 @24440 has 23 MA's), (35, 24524), (36, 24557), (40, 24587), (47, 24701), (48, 24725), (55, 24854), (56, 24881), (58, 24914), (63, 25004), (66, 25082), (70, 25118), (71, 25121), (76, 25262), (77, 25268), (82, 25358), (89, 25433), (93, 25511), (96, 25535),

Gene: Akoma_46 Start: 40271, Stop: 41536, Start Num: 20

Candidate Starts for Akoma_46:

(17, 40241), (Start: 18 @40259 has 10 MA's), (19, 40262), (Start: 20 @40271 has 14 MA's), (Start: 22 @40313 has 16 MA's), (Start: 26 @40334 has 1 MA's), (29, 40361), (30, 40376), (31, 40418), (Start: 38 @40469 has 1 MA's), (44, 40559), (46, 40574), (50, 40688), (57, 40790), (65, 40952), (67, 40997), (68, 41003), (69, 41006), (70, 41012), (72, 41042), (75, 41144), (79, 41201), (82, 41252), (84, 41288), (85, 41300), (86, 41333), (88, 41348), (100, 41498),

Gene: Appletree2_25 Start: 24318, Stop: 25490, Start Num: 23

Candidate Starts for Appletree2_25:

(21, 24288), (Start: 23 @24318 has 26 MA's), (57, 24765), (61, 24843), (63, 24888), (67, 24963), (72, 25008), (74, 25083), (75, 25110), (77, 25128), (79, 25164), (80, 25167), (83, 25227), (86, 25278), (88, 25293), (93, 25362), (96, 25386), (102, 25446),

Gene: Archie_27 Start: 25565, Stop: 26734, Start Num: 23

Candidate Starts for Archie_27:

(Start: 23 @25565 has 26 MA's), (45, 25817), (53, 25979), (56, 26006), (61, 26087), (62, 26096), (67, 26207), (75, 26354), (76, 26366), (77, 26372), (79, 26408), (80, 26411), (83, 26471), (88, 26537), (93, 26606), (96, 26630), (103, 26696),

Gene: Athena_47 Start: 41006, Stop: 42283, Start Num: 18

Candidate Starts for Athena_47:

(17, 40988), (Start: 18 @41006 has 10 MA's), (19, 41009), (Start: 20 @41018 has 14 MA's), (Start: 22 @41060 has 16 MA's), (Start: 26 @41081 has 1 MA's), (29, 41108), (30, 41123), (31, 41165), (Start: 38 @41216 has 1 MA's), (44, 41306), (46, 41321), (50, 41435), (57, 41537), (65, 41699), (67, 41744), (68, 41750), (69, 41753), (70, 41759), (72, 41789), (75, 41891), (79, 41948), (82, 41999), (84, 42035), (85, 42047), (86, 42080), (88, 42095), (100, 42245),

Gene: Aubs_30 Start: 26472, Stop: 27662, Start Num: 28

Candidate Starts for Aubs_30:

(6, 26199), (7, 26202), (Start: 28 @26472 has 23 MA's), (34, 26556), (46, 26706), (49, 26760), (56, 26901), (61, 26982), (67, 27108), (68, 27114), (72, 27153), (73, 27213), (74, 27228), (77, 27270), (79, 27306), (80, 27309), (81, 27324), (82, 27360), (83, 27369), (91, 27483),

Gene: Audrey_46 Start: 40308, Stop: 41531, Start Num: 22

Candidate Starts for Audrey_46:

(Start: 22 @40308 has 16 MA's), (Start: 26 @40329 has 1 MA's), (29, 40356), (30, 40371), (31, 40413), (Start: 38 @40464 has 1 MA's), (44, 40554), (46, 40569), (50, 40683), (57, 40785), (65, 40947), (67, 40992), (68, 40998), (69, 41001), (70, 41007), (72, 41037), (75, 41139), (79, 41196), (82, 41247), (84, 41283), (85, 41295), (86, 41328), (88, 41343), (100, 41493),

Gene: AvadaKedavra_25 Start: 24385, Stop: 25557, Start Num: 23

Candidate Starts for AvadaKedavra_25:

(21, 24355), (Start: 23 @24385 has 26 MA's), (57, 24832), (61, 24910), (63, 24955), (67, 25030), (72, 25075), (74, 25150), (75, 25177), (77, 25195), (79, 25231), (80, 25234), (83, 25294), (86, 25345), (88, 25360), (93, 25429), (96, 25453), (102, 25513),

Gene: Awesomesauce_31 Start: 26200, Stop: 27402, Start Num: 28

Candidate Starts for Awesomesauce_31:

(Start: 28 @26200 has 23 MA's), (34, 26284), (46, 26434), (49, 26488), (56, 26629), (61, 26710), (67, 26836), (68, 26842), (69, 26845), (72, 26881), (74, 26956), (77, 26998), (79, 27034), (82, 27088), (83, 27097), (88, 27163), (91, 27220), (94, 27262), (95, 27271), (97, 27313), (98, 27328), (99, 27331),

Gene: Baloo_46 Start: 40311, Stop: 41534, Start Num: 22

Candidate Starts for Baloo_46:

(Start: 22 @40311 has 16 MA's), (Start: 26 @40332 has 1 MA's), (29, 40359), (30, 40374), (31, 40416), (Start: 38 @40467 has 1 MA's), (44, 40557), (46, 40572), (50, 40686), (57, 40788), (65, 40950), (67, 40995), (68, 41001), (69, 41004), (70, 41010), (72, 41040), (75, 41142), (79, 41199), (82, 41250), (84, 41286), (85, 41298), (86, 41331), (88, 41346), (100, 41496),

Gene: Baudelaire_28 Start: 24440, Stop: 25621, Start Num: 28

Candidate Starts for Baudelaire_28:

(Start: 28 @24440 has 23 MA's), (35, 24524), (36, 24557), (40, 24587), (47, 24701), (48, 24725), (55, 24854), (56, 24881), (58, 24914), (63, 25004), (66, 25082), (70, 25118), (71, 25121), (76, 25262), (77, 25268), (82, 25358), (89, 25433), (93, 25511), (96, 25535),

Gene: Bazzle_27 Start: 25314, Stop: 26483, Start Num: 23

Candidate Starts for Bazzle_27:

(Start: 23 @25314 has 26 MA's), (45, 25566), (53, 25728), (56, 25755), (61, 25836), (62, 25845), (67, 25956), (75, 26103), (76, 26115), (77, 26121), (79, 26157), (80, 26160), (83, 26220), (88, 26286), (93, 26355), (96, 26379), (103, 26445),

Gene: Beakin_31 Start: 26224, Stop: 27414, Start Num: 28

Candidate Starts for Beakin_31:

(6, 25951), (8, 25972), (Start: 28 @26224 has 23 MA's), (34, 26308), (46, 26458), (49, 26512), (56, 26653), (61, 26731), (67, 26857), (68, 26863), (72, 26902), (73, 26962), (74, 26977), (77, 27019), (79, 27055), (80, 27058), (82, 27109), (83, 27118), (91, 27232), (94, 27274), (95, 27283), (97, 27325), (98, 27340), (99, 27343), (101, 27349),

Gene: Ben11_45 Start: 40131, Stop: 41354, Start Num: 22

Candidate Starts for Ben11_45:

(Start: 13 @40017 has 1 MA's), (14, 40020), (Start: 22 @40131 has 16 MA's), (Start: 26 @40152 has 1 MA's), (29, 40179), (30, 40194), (31, 40236), (Start: 38 @40287 has 1 MA's), (44, 40377), (46, 40392), (50, 40506), (57, 40608), (65, 40770), (67, 40815), (68, 40821), (69, 40824), (70, 40830), (72, 40860), (75, 40962), (79, 41019), (82, 41070), (84, 41106), (85, 41118), (86, 41151), (88, 41166), (100, 41316),

Gene: Bernardo_47 Start: 40743, Stop: 42080, Start Num: 13

Candidate Starts for Bernardo_47:

(Start: 13 @40743 has 1 MA's), (14, 40746), (Start: 22 @40857 has 16 MA's), (Start: 26 @40878 has 1 MA's), (29, 40905), (30, 40920), (31, 40962), (Start: 38 @41013 has 1 MA's), (44, 41103), (46, 41118), (50, 41232), (57, 41334), (65, 41496), (67, 41541), (68, 41547), (70, 41556), (72, 41586), (75, 41688), (79, 41745), (82, 41796), (84, 41832), (85, 41844), (86, 41877), (88, 41892), (100, 42042),

Gene: Briakila_47 Start: 41025, Stop: 42302, Start Num: 18

Candidate Starts for Briakila_47:

(17, 41007), (Start: 18 @41025 has 10 MA's), (19, 41028), (Start: 20 @41037 has 14 MA's), (Start: 22 @41079 has 16 MA's), (Start: 26 @41100 has 1 MA's), (29, 41127), (30, 41142), (31, 41184), (Start: 38 @41235 has 1 MA's), (44, 41325), (46, 41340), (50, 41454), (57, 41556), (65, 41718), (67, 41763), (68, 41769), (69, 41772), (70, 41778), (72, 41808), (75, 41910), (79, 41967), (82, 42018), (84, 42054), (85, 42066), (86, 42099), (88, 42114), (100, 42264),

Gene: Brocalys_25 Start: 22152, Stop: 23312, Start Num: 28

Candidate Starts for Brocalys_25:

(7, 21882), (Start: 28 @22152 has 23 MA's), (34, 22236), (46, 22386), (49, 22440), (52, 22533), (54, 22563), (56, 22584), (61, 22662), (67, 22788), (68, 22794), (74, 22908), (77, 22950), (78, 22983), (80, 22989), (83, 23049),

Gene: Bromden_27 Start: 24744, Stop: 25913, Start Num: 23

Candidate Starts for Bromden_27:

(Start: 23 @24744 has 26 MA's), (Start: 25 @24753 has 1 MA's), (37, 24888), (41, 24954), (44, 24984), (50, 25116), (56, 25185), (61, 25266), (67, 25386), (75, 25533), (77, 25551), (79, 25587), (83, 25650), (88, 25716), (92, 25782), (93, 25785),

Gene: Calm_25 Start: 24389, Stop: 25561, Start Num: 23

Candidate Starts for Calm_25:

(21, 24359), (Start: 23 @24389 has 26 MA's), (57, 24836), (61, 24914), (63, 24959), (67, 25034), (72, 25079), (74, 25154), (75, 25181), (77, 25199), (79, 25235), (80, 25238), (83, 25298), (86, 25349), (88, 25364), (93, 25433), (96, 25457), (102, 25517),

Gene: Casbah_45 Start: 40161, Stop: 41384, Start Num: 22

Candidate Starts for Casbah_45:

(Start: 13 @40047 has 1 MA's), (14, 40050), (Start: 22 @40161 has 16 MA's), (Start: 26 @40182 has 1 MA's), (29, 40209), (30, 40224), (31, 40266), (Start: 38 @40317 has 1 MA's), (44, 40407), (46, 40422), (50, 40536), (57, 40638), (65, 40800), (67, 40845), (68, 40851), (69, 40854), (70, 40860), (72, 40890), (75, 40992), (79, 41049), (82, 41100), (84, 41136), (85, 41148), (86, 41181), (88, 41196), (100, 41346),

Gene: ChaChing_46 Start: 40324, Stop: 41547, Start Num: 22

Candidate Starts for ChaChing_46:

(17, 40252), (Start: 18 @40270 has 10 MA's), (19, 40273), (Start: 20 @40282 has 14 MA's), (Start: 22 @40324 has 16 MA's), (Start: 26 @40345 has 1 MA's), (29, 40372), (30, 40387), (31, 40429), (Start: 38 @40480 has 1 MA's), (44, 40570), (46, 40585), (50, 40699), (57, 40801), (65, 40963), (67, 41008), (68, 41014), (69, 41017), (70, 41023), (72, 41053), (75, 41155), (79, 41212), (82, 41263), (84, 41299), (85, 41311), (86, 41344), (88, 41359), (100, 41509),

Gene: Chandler_46 Start: 41050, Stop: 42315, Start Num: 20

Candidate Starts for Chandler_46:

(17, 41020), (Start: 18 @41038 has 10 MA's), (19, 41041), (Start: 20 @41050 has 14 MA's), (Start: 22 @41092 has 16 MA's), (Start: 26 @41113 has 1 MA's), (29, 41140), (30, 41155), (31, 41197), (Start: 38 @41248 has 1 MA's), (44, 41338), (46, 41353), (50, 41467), (57, 41569), (65, 41731), (67, 41776), (68, 41782), (69, 41785), (70, 41791), (72, 41821), (75, 41923), (79, 41980), (82, 42031), (84, 42067), (85, 42079), (86, 42112), (88, 42127), (100, 42277),

Gene: Chaser_25 Start: 24155, Stop: 25327, Start Num: 23

Candidate Starts for Chaser_25:

(Start: 23 @24155 has 26 MA's), (Start: 25 @24164 has 1 MA's), (50, 24530), (56, 24599), (61, 24680), (67, 24800), (77, 24965), (79, 25001), (83, 25064), (88, 25130), (92, 25196), (93, 25199),

Gene: ChickenDinner_32 Start: 26938, Stop: 28140, Start Num: 28

Candidate Starts for ChickenDinner_32:

(Start: 28 @26938 has 23 MA's), (34, 27022), (46, 27172), (49, 27226), (56, 27367), (61, 27448), (67, 27574), (68, 27580), (69, 27583), (72, 27619), (74, 27694), (77, 27736), (79, 27772), (82, 27826), (83, 27835), (88, 27901), (91, 27958), (94, 28000), (95, 28009), (97, 28051), (98, 28066), (99, 28069),

Gene: CicholasNage_25 Start: 24377, Stop: 25549, Start Num: 23

Candidate Starts for CicholasNage_25:

(21, 24347), (Start: 23 @24377 has 26 MA's), (57, 24824), (61, 24902), (63, 24947), (67, 25022), (72, 25067), (74, 25142), (75, 25169), (77, 25187), (79, 25223), (80, 25226), (83, 25286), (86, 25337), (88, 25352), (93, 25421), (96, 25445), (102, 25505),

Gene: Compostia_47 Start: 40686, Stop: 41963, Start Num: 18

Candidate Starts for Compostia_47:

(17, 40668), (Start: 18 @40686 has 10 MA's), (19, 40689), (Start: 20 @40698 has 14 MA's), (Start: 22 @40740 has 16 MA's), (Start: 26 @40761 has 1 MA's), (29, 40788), (30, 40803), (31, 40845), (Start: 38 @40896 has 1 MA's), (44, 40986), (46, 41001), (50, 41115), (57, 41217), (65, 41379), (67, 41424), (68, 41430), (69, 41433), (70, 41439), (72, 41469), (75, 41571), (79, 41628), (82, 41679), (84, 41715), (85, 41727), (86, 41760), (88, 41775), (100, 41925),

Gene: Cornucopia_31 Start: 26383, Stop: 27534, Start Num: 28

Candidate Starts for Cornucopia_31:

(6, 26110), (8, 26131), (Start: 28 @26383 has 23 MA's), (34, 26467), (46, 26617), (49, 26671), (56, 26812), (61, 26890), (67, 27016), (68, 27022), (72, 27061), (73, 27121), (74, 27136), (77, 27178), (79, 27214), (80, 27217), (82, 27268), (83, 27277), (91, 27391), (99, 27502), (104, 27520), (106, 27523),

Gene: Corofin_46 Start: 40293, Stop: 41558, Start Num: 20

Candidate Starts for Corofin_46:

(17, 40263), (Start: 18 @40281 has 10 MA's), (19, 40284), (Start: 20 @40293 has 14 MA's), (Start: 22 @40335 has 16 MA's), (Start: 26 @40356 has 1 MA's), (29, 40383), (30, 40398), (31, 40440), (Start: 38 @40491 has 1 MA's), (44, 40581), (46, 40596), (50, 40710), (57, 40812), (65, 40974), (67, 41019),

(68, 41025), (69, 41028), (70, 41034), (72, 41064), (75, 41166), (79, 41223), (82, 41274), (84, 41310), (85, 41322), (86, 41355), (88, 41370), (100, 41520),

Gene: Crumble_24 Start: 22512, Stop: 23705, Start Num: 28

Candidate Starts for Crumble_24:

(7, 22242), (Start: 28 @22512 has 23 MA's), (34, 22596), (46, 22746), (49, 22800), (52, 22893), (54, 22923), (56, 22944), (61, 23022), (67, 23148), (68, 23154), (69, 23157), (74, 23268), (77, 23310), (79, 23346), (80, 23349), (82, 23400), (83, 23409), (91, 23523), (94, 23565), (95, 23574), (98, 23631), (99, 23634),

Gene: Daisy_46 Start: 40294, Stop: 41559, Start Num: 20

Candidate Starts for Daisy_46:

(17, 40264), (Start: 18 @40282 has 10 MA's), (19, 40285), (Start: 20 @40294 has 14 MA's), (Start: 22 @40336 has 16 MA's), (Start: 26 @40357 has 1 MA's), (29, 40384), (30, 40399), (31, 40441), (Start: 38 @40492 has 1 MA's), (44, 40582), (46, 40597), (50, 40711), (57, 40813), (65, 40975), (67, 41020), (68, 41026), (69, 41029), (70, 41035), (72, 41065), (75, 41167), (79, 41224), (82, 41275), (84, 41311), (85, 41323), (86, 41356), (88, 41371), (100, 41521),

Gene: Deenasa_46 Start: 41029, Stop: 42294, Start Num: 20

Candidate Starts for Deenasa_46:

(17, 40999), (Start: 18 @41017 has 10 MA's), (19, 41020), (Start: 20 @41029 has 14 MA's), (Start: 22 @41071 has 16 MA's), (Start: 26 @41092 has 1 MA's), (29, 41119), (30, 41134), (31, 41176), (Start: 38 @41227 has 1 MA's), (44, 41317), (46, 41332), (50, 41446), (57, 41548), (65, 41710), (67, 41755), (68, 41761), (69, 41764), (70, 41770), (72, 41800), (75, 41902), (79, 41959), (82, 42010), (84, 42046), (85, 42058), (86, 42091), (88, 42106), (100, 42256),

Gene: Devonte_46 Start: 40300, Stop: 41523, Start Num: 22

Candidate Starts for Devonte_46:

(Start: 13 @40186 has 1 MA's), (14, 40189), (Start: 22 @40300 has 16 MA's), (Start: 26 @40321 has 1 MA's), (29, 40348), (30, 40363), (31, 40405), (Start: 38 @40456 has 1 MA's), (44, 40546), (46, 40561), (50, 40675), (57, 40777), (65, 40939), (67, 40984), (68, 40990), (69, 40993), (70, 40999), (72, 41029), (75, 41131), (79, 41188), (82, 41239), (84, 41275), (85, 41287), (86, 41320), (88, 41335), (100, 41485),

Gene: DirkDirk_25 Start: 24358, Stop: 25530, Start Num: 23

Candidate Starts for DirkDirk_25:

(21, 24328), (Start: 23 @24358 has 26 MA's), (57, 24805), (61, 24883), (63, 24928), (67, 25003), (72, 25048), (74, 25123), (75, 25150), (77, 25168), (79, 25204), (80, 25207), (83, 25267), (86, 25318), (88, 25333), (93, 25402), (96, 25426), (102, 25486),

Gene: DocMcStuffins_31 Start: 26938, Stop: 28140, Start Num: 28

Candidate Starts for DocMcStuffins_31:

(Start: 28 @26938 has 23 MA's), (34, 27022), (46, 27172), (49, 27226), (56, 27367), (61, 27448), (67, 27574), (68, 27580), (69, 27583), (72, 27619), (74, 27694), (77, 27736), (79, 27772), (82, 27826), (83, 27835), (88, 27901), (91, 27958), (94, 28000), (95, 28009), (97, 28051), (98, 28066), (99, 28069),

Gene: Doug_31 Start: 26879, Stop: 28087, Start Num: 28

Candidate Starts for Doug_31:

(6, 26606), (7, 26609), (Start: 28 @26879 has 23 MA's), (34, 26963), (46, 27113), (49, 27167), (56, 27308), (61, 27386), (67, 27512), (68, 27518), (72, 27557), (73, 27617), (74, 27632), (77, 27674), (79, 27710), (80, 27713), (82, 27764), (83, 27773), (91, 27887), (99, 27998),

Gene: Douge_25 Start: 24093, Stop: 25265, Start Num: 23

Candidate Starts for Douge_25:

(Start: 23 @24093 has 26 MA's), (Start: 25 @24102 has 1 MA's), (50, 24468), (56, 24537), (61, 24618), (67, 24738), (75, 24885), (77, 24903), (79, 24939), (83, 25002), (88, 25068), (92, 25134), (93, 25137),

Gene: DyoEdafos_26 Start: 24309, Stop: 25472, Start Num: 25

Candidate Starts for DyoEdafos_26:

(Start: 23 @24300 has 26 MA's), (Start: 25 @24309 has 1 MA's), (37, 24444), (41, 24510), (44, 24540), (45, 24549), (50, 24672), (56, 24744), (61, 24825), (62, 24834), (67, 24945), (69, 24954), (71, 24963), (75, 25092), (80, 25149), (83, 25209), (84, 25236), (88, 25275), (90, 25287), (92, 25341), (93, 25344),

Gene: Enceladus_25 Start: 24359, Stop: 25531, Start Num: 23

Candidate Starts for Enceladus_25:

(21, 24329), (Start: 23 @24359 has 26 MA's), (57, 24806), (61, 24884), (63, 24929), (67, 25004), (72, 25049), (74, 25124), (75, 25151), (77, 25169), (79, 25205), (80, 25208), (83, 25268), (86, 25319), (88, 25334), (93, 25403), (96, 25427), (102, 25487),

Gene: Finemlucis_27 Start: 25356, Stop: 26525, Start Num: 23

Candidate Starts for Finemlucis_27:

(Start: 23 @25356 has 26 MA's), (33, 25464), (39, 25524), (45, 25608), (53, 25770), (56, 25797), (61, 25878), (67, 25998), (68, 26004), (75, 26145), (77, 26163), (79, 26199), (80, 26202), (83, 26262), (92, 26394), (93, 26397), (96, 26421),

Gene: Gabriela_27 Start: 25348, Stop: 26517, Start Num: 23

Candidate Starts for Gabriela_27:

(Start: 23 @25348 has 26 MA's), (39, 25516), (45, 25600), (49, 25660), (56, 25789), (61, 25870), (67, 25990), (68, 25996), (75, 26137), (77, 26155), (79, 26191), (83, 26254), (92, 26386), (93, 26389), (96, 26413),

Gene: Gadjet_47 Start: 40269, Stop: 41546, Start Num: 18

Candidate Starts for Gadjet_47:

(17, 40251), (Start: 18 @40269 has 10 MA's), (19, 40272), (Start: 20 @40281 has 14 MA's), (Start: 22 @40323 has 16 MA's), (Start: 26 @40344 has 1 MA's), (29, 40371), (30, 40386), (31, 40428), (Start: 38 @40479 has 1 MA's), (44, 40569), (46, 40584), (50, 40698), (57, 40800), (65, 40962), (67, 41007), (68, 41013), (69, 41016), (70, 41022), (72, 41052), (75, 41154), (79, 41211), (82, 41262), (84, 41298), (85, 41310), (86, 41343), (88, 41358), (100, 41508),

Gene: Gervas_46 Start: 40290, Stop: 41513, Start Num: 22

Candidate Starts for Gervas_46:

(Start: 13 @40176 has 1 MA's), (14, 40179), (Start: 22 @40290 has 16 MA's), (Start: 26 @40311 has 1 MA's), (29, 40338), (30, 40353), (31, 40395), (Start: 38 @40446 has 1 MA's), (44, 40536), (46, 40551), (50, 40665), (57, 40767), (65, 40929), (67, 40974), (68, 40980), (69, 40983), (70, 40989), (72, 41019), (75, 41121), (79, 41178), (82, 41229), (84, 41265), (85, 41277), (86, 41310), (88, 41325), (100, 41475),

Gene: GlenHope_47 Start: 40249, Stop: 41526, Start Num: 18

Candidate Starts for GlenHope_47:

(17, 40231), (Start: 18 @40249 has 10 MA's), (19, 40252), (Start: 20 @40261 has 14 MA's), (Start: 22 @40303 has 16 MA's), (Start: 26 @40324 has 1 MA's), (29, 40351), (30, 40366), (31, 40408), (Start: 38 @40459 has 1 MA's), (44, 40549), (46, 40564), (50, 40678), (57, 40780), (65, 40942), (67, 40987), (68, 40993), (70, 41002), (72, 41032), (75, 41134), (79, 41191), (82, 41242), (84, 41278), (85, 41290), (86, 41323), (88, 41338), (100, 41488),

Gene: Halena_25 Start: 24386, Stop: 25558, Start Num: 23

Candidate Starts for Halena_25:

(21, 24356), (Start: 23 @24386 has 26 MA's), (57, 24833), (61, 24911), (63, 24956), (67, 25031), (72, 25076), (74, 25151), (75, 25178), (77, 25196), (79, 25232), (80, 25235), (83, 25295), (86, 25346), (88, 25361), (93, 25430), (96, 25454), (102, 25514),

Gene: Halfpint_45 Start: 40023, Stop: 41351, Start Num: 15

Candidate Starts for Halfpint_45:

(1, 39747), (2, 39768), (3, 39786), (4, 39792), (5, 39879), (9, 39927), (10, 39942), (11, 40002), (12, 40005), (Start: 15 @40023 has 1 MA's), (16, 40026), (Start: 22 @40128 has 16 MA's), (Start: 26 @40149 has 1 MA's), (29, 40176), (30, 40191), (31, 40233), (Start: 38 @40284 has 1 MA's), (44, 40374), (46, 40389), (50, 40503), (57, 40605), (65, 40767), (67, 40812), (68, 40818), (69, 40821), (70, 40827), (72, 40857), (75, 40959), (79, 41016), (82, 41067), (84, 41103), (85, 41115), (86, 41148), (88, 41163), (100, 41313),

Gene: HarveySr_46 Start: 40242, Stop: 41519, Start Num: 18

Candidate Starts for HarveySr_46:

(17, 40224), (Start: 18 @40242 has 10 MA's), (19, 40245), (Start: 20 @40254 has 14 MA's), (Start: 22 @40296 has 16 MA's), (Start: 26 @40317 has 1 MA's), (29, 40344), (30, 40359), (31, 40401), (Start: 38 @40452 has 1 MA's), (44, 40542), (46, 40557), (50, 40671), (57, 40773), (65, 40935), (67, 40980), (68, 40986), (69, 40989), (70, 40995), (72, 41025), (75, 41127), (79, 41184), (82, 41235), (84, 41271), (85, 41283), (86, 41316), (88, 41331), (100, 41481),

Gene: Heathcliff_46 Start: 40232, Stop: 41497, Start Num: 20

Candidate Starts for Heathcliff_46:

(17, 40202), (Start: 18 @40220 has 10 MA's), (19, 40223), (Start: 20 @40232 has 14 MA's), (Start: 22 @40274 has 16 MA's), (Start: 26 @40295 has 1 MA's), (29, 40322), (30, 40337), (31, 40379), (Start: 38 @40430 has 1 MA's), (44, 40520), (46, 40535), (50, 40649), (57, 40751), (65, 40913), (67, 40958), (68, 40964), (69, 40967), (70, 40973), (72, 41003), (75, 41105), (79, 41162), (82, 41213), (84, 41249), (85, 41261), (86, 41294), (88, 41309), (100, 41459),

Gene: Hegedechwinu_31 Start: 26345, Stop: 27553, Start Num: 28

Candidate Starts for Hegedechwinu_31:

(Start: 28 @26345 has 23 MA's), (34, 26429), (46, 26579), (49, 26633), (56, 26774), (61, 26852), (67, 26978), (68, 26984), (72, 27023), (73, 27083), (74, 27098), (77, 27140), (79, 27176), (80, 27179), (82, 27230), (83, 27239), (91, 27353), (99, 27464),

Gene: Inventum_30 Start: 26444, Stop: 27607, Start Num: 28

Candidate Starts for Inventum_30:

(Start: 28 @26444 has 23 MA's), (34, 26528), (46, 26678), (49, 26732), (56, 26873), (61, 26951), (67, 27077), (68, 27083), (72, 27122), (73, 27182), (74, 27197), (77, 27239), (79, 27275), (80, 27278), (82, 27329), (83, 27338), (91, 27452),

Gene: Jackstina_43 Start: 40179, Stop: 41456, Start Num: 18

Candidate Starts for Jackstina_43:

(17, 40161), (Start: 18 @40179 has 10 MA's), (19, 40182), (Start: 20 @40191 has 14 MA's), (Start: 22 @40233 has 16 MA's), (Start: 26 @40254 has 1 MA's), (29, 40281), (30, 40296), (31, 40338), (Start: 38 @40389 has 1 MA's), (44, 40479), (46, 40494), (50, 40608), (57, 40710), (65, 40872), (67, 40917), (68, 40923), (69, 40926), (70, 40932), (72, 40962), (75, 41064), (79, 41121), (82, 41172), (84, 41208), (85, 41220), (86, 41253), (88, 41268), (100, 41418),

Gene: JoeDirt_25 Start: 24357, Stop: 25529, Start Num: 23

Candidate Starts for JoeDirt_25:

(21, 24327), (Start: 23 @24357 has 26 MA's), (57, 24804), (61, 24882), (63, 24927), (67, 25002), (72, 25047), (74, 25122), (75, 25149), (77, 25167), (79, 25203), (80, 25206), (83, 25266), (86, 25317), (88, 25332), (93, 25401), (96, 25425),

Gene: Juice456_31 Start: 27616, Stop: 28824, Start Num: 28

Candidate Starts for Juice456_31:

(Start: 28 @27616 has 23 MA's), (34, 27700), (46, 27850), (49, 27904), (56, 28045), (61, 28123), (67, 28249), (68, 28255), (72, 28294), (73, 28354), (74, 28369), (77, 28411), (79, 28447), (80, 28450), (82, 28501), (83, 28510), (91, 28624), (99, 28735),

Gene: Kamiyu_46 Start: 40176, Stop: 41504, Start Num: 15

Candidate Starts for Kamiyu_46:

(1, 39900), (2, 39921), (3, 39939), (4, 39945), (5, 40032), (9, 40080), (10, 40095), (11, 40155), (12, 40158), (Start: 15 @40176 has 1 MA's), (16, 40179), (Start: 22 @40281 has 16 MA's), (Start: 26 @40302 has 1 MA's), (29, 40329), (30, 40344), (31, 40386), (Start: 38 @40437 has 1 MA's), (44, 40527), (46, 40542), (50, 40656), (57, 40758), (65, 40920), (67, 40965), (68, 40971), (69, 40974), (70, 40980), (72, 41010), (75, 41112), (79, 41169), (82, 41220), (84, 41256), (85, 41268), (86, 41301), (88, 41316), (100, 41466),

Gene: Kimberlium_32 Start: 27454, Stop: 28644, Start Num: 28

Candidate Starts for Kimberlium_32:

(Start: 28 @27454 has 23 MA's), (34, 27538), (46, 27688), (49, 27742), (56, 27883), (61, 27961), (67, 28087), (68, 28093), (72, 28132), (73, 28192), (74, 28207), (77, 28249), (79, 28285), (80, 28288), (82, 28339), (83, 28348), (91, 28462), (94, 28504), (95, 28513), (98, 28570), (99, 28573),

Gene: KristaRAM_31 Start: 27175, Stop: 28344, Start Num: 28

Candidate Starts for KristaRAM_31:

(6, 26902), (7, 26905), (Start: 28 @27175 has 23 MA's), (34, 27259), (46, 27409), (49, 27463), (56, 27604), (65, 27781), (67, 27823), (69, 27832), (75, 27970), (99, 28312), (105, 28333),

Gene: Kronus_45 Start: 40850, Stop: 42115, Start Num: 20

Candidate Starts for Kronus_45:

(17, 40820), (Start: 18 @40838 has 10 MA's), (19, 40841), (Start: 20 @40850 has 14 MA's), (Start: 22 @40892 has 16 MA's), (Start: 26 @40913 has 1 MA's), (29, 40940), (30, 40955), (31, 40997), (Start: 38 @41048 has 1 MA's), (44, 41138), (46, 41153), (50, 41267), (57, 41369), (65, 41531), (67, 41576), (68, 41582), (69, 41585), (70, 41591), (72, 41621), (75, 41723), (79, 41780), (82, 41831), (84, 41867), (85, 41879), (86, 41912), (88, 41927), (100, 42077),

Gene: LeBron_25 Start: 24401, Stop: 25573, Start Num: 23

Candidate Starts for LeBron_25:

(21, 24371), (Start: 23 @24401 has 26 MA's), (57, 24848), (61, 24926), (63, 24971), (67, 25046), (72, 25091), (74, 25166), (75, 25193), (77, 25211), (79, 25247), (80, 25250), (83, 25310), (86, 25361), (88, 25376), (93, 25445), (96, 25469), (102, 25529),

Gene: LestyG_46 Start: 40313, Stop: 41536, Start Num: 22

Candidate Starts for LestyG_46:

(Start: 13 @40199 has 1 MA's), (14, 40202), (Start: 22 @40313 has 16 MA's), (Start: 26 @40334 has 1 MA's), (29, 40361), (30, 40376), (31, 40418), (Start: 38 @40469 has 1 MA's), (44, 40559), (46, 40574), (50, 40688), (57, 40790), (65, 40952), (67, 40997), (68, 41003), (69, 41006), (70, 41012), (72, 41042), (75, 41144), (79, 41201), (82, 41252), (84, 41288), (85, 41300), (86, 41333), (88, 41348), (100, 41498),

Gene: MAckerman_25 Start: 24375, Stop: 25547, Start Num: 23

Candidate Starts for MAckerman_25:

(21, 24345), (Start: 23 @24375 has 26 MA's), (57, 24822), (61, 24900), (63, 24945), (67, 25020), (72, 25065), (74, 25140), (75, 25167), (77, 25185), (79, 25221), (80, 25224), (83, 25284), (86, 25335), (88, 25350), (93, 25419), (96, 25443), (102, 25503),

Gene: Marker_32 Start: 26193, Stop: 27383, Start Num: 28

Candidate Starts for Marker_32:

(6, 25920), (7, 25923), (Start: 28 @26193 has 23 MA's), (34, 26277), (46, 26427), (49, 26481), (56, 26622), (61, 26700), (67, 26826), (68, 26832), (72, 26871), (73, 26931), (74, 26946), (77, 26988), (79, 27024), (80, 27027), (81, 27042), (82, 27078), (83, 27087), (91, 27201), (94, 27243), (95, 27252), (98, 27309), (99, 27312),

Gene: Marley1013_46 Start: 41091, Stop: 42314, Start Num: 22

Candidate Starts for Marley1013_46:

(Start: 13 @40977 has 1 MA's), (14, 40980), (Start: 22 @41091 has 16 MA's), (Start: 26 @41112 has 1 MA's), (29, 41139), (30, 41154), (31, 41196), (Start: 38 @41247 has 1 MA's), (44, 41337), (46, 41352), (50, 41466), (57, 41568), (65, 41730), (67, 41775), (68, 41781), (69, 41784), (70, 41790), (72, 41820), (75, 41922), (79, 41979), (82, 42030), (84, 42066), (85, 42078), (86, 42111), (88, 42126), (100, 42276),

Gene: Misha28_31 Start: 26205, Stop: 27407, Start Num: 28

Candidate Starts for Misha28_31:

(Start: 28 @26205 has 23 MA's), (34, 26289), (46, 26439), (49, 26493), (56, 26634), (61, 26715), (67, 26841), (68, 26847), (69, 26850), (72, 26886), (74, 26961), (77, 27003), (79, 27039), (82, 27093), (83, 27102), (88, 27168), (91, 27225), (94, 27267), (95, 27276), (97, 27318), (98, 27333), (99, 27336),

Gene: MmasiCarm_46 Start: 40295, Stop: 41518, Start Num: 22

Candidate Starts for MmasiCarm_46:

(Start: 13 @40181 has 1 MA's), (14, 40184), (Start: 22 @40295 has 16 MA's), (Start: 26 @40316 has 1 MA's), (29, 40343), (30, 40358), (31, 40400), (Start: 38 @40451 has 1 MA's), (44, 40541), (46, 40556), (50, 40670), (57, 40772), (65, 40934), (67, 40979), (68, 40985), (69, 40988), (70, 40994), (72, 41024), (75, 41126), (79, 41183), (82, 41234), (84, 41270), (85, 41282), (86, 41315), (88, 41330), (100, 41480),

Gene: Mortcellus_45 Start: 40947, Stop: 42170, Start Num: 22

Candidate Starts for Mortcellus_45:

(Start: 13 @40833 has 1 MA's), (14, 40836), (Start: 22 @40947 has 16 MA's), (Start: 26 @40968 has 1 MA's), (29, 40995), (30, 41010), (31, 41052), (Start: 38 @41103 has 1 MA's), (44, 41193), (46, 41208), (50, 41322), (57, 41424), (65, 41586), (67, 41631), (68, 41637), (69, 41640), (70, 41646), (72, 41676), (75, 41778), (79, 41835), (82, 41886), (84, 41922), (85, 41934), (86, 41967), (88, 41982), (100, 42132),

Gene: Morty007_46 Start: 41112, Stop: 42314, Start Num: 26

Candidate Starts for Morty007_46:

(Start: 13 @40977 has 1 MA's), (14, 40980), (Start: 22 @41091 has 16 MA's), (Start: 26 @41112 has 1 MA's), (29, 41139), (30, 41154), (31, 41196), (Start: 38 @41247 has 1 MA's), (44, 41337), (46, 41352), (50, 41466), (57, 41568), (65, 41730), (67, 41775), (68, 41781), (69, 41784), (70, 41790), (72, 41820), (75, 41922), (79, 41979), (82, 42030), (84, 42066), (85, 42078), (86, 42111), (88, 42126), (100, 42276),

Gene: Mozy_31 Start: 26391, Stop: 27581, Start Num: 28

Candidate Starts for Mozy_31:

(Start: 28 @26391 has 23 MA's), (34, 26475), (46, 26625), (49, 26679), (52, 26772), (56, 26820), (61, 26898), (67, 27024), (68, 27030), (72, 27069), (74, 27144), (77, 27186), (79, 27222), (82, 27276), (83, 27285), (91, 27399), (94, 27441), (95, 27450), (98, 27507), (99, 27510),

Gene: Neos5_46 Start: 41052, Stop: 42329, Start Num: 18

Candidate Starts for Neos5_46:

(17, 41034), (Start: 18 @41052 has 10 MA's), (19, 41055), (Start: 20 @41064 has 14 MA's), (Start: 22 @41106 has 16 MA's), (Start: 26 @41127 has 1 MA's), (29, 41154), (30, 41169), (31, 41211), (Start: 38 @41262 has 1 MA's), (44, 41352), (46, 41367), (50, 41481), (57, 41583), (65, 41745), (67, 41790), (68, 41796), (69, 41799), (70, 41805), (72, 41835), (75, 41937), (79, 41994), (82, 42045), (84, 42081), (85, 42093), (86, 42126), (88, 42141), (100, 42291),

Gene: Nozo_46 Start: 41071, Stop: 42294, Start Num: 22

Candidate Starts for Nozo_46:

(17, 40999), (Start: 18 @41017 has 10 MA's), (19, 41020), (Start: 20 @41029 has 14 MA's), (Start: 22 @41071 has 16 MA's), (Start: 26 @41092 has 1 MA's), (29, 41119), (30, 41134), (31, 41176), (Start: 38 @41227 has 1 MA's), (44, 41317), (46, 41332), (50, 41446), (57, 41548), (65, 41710), (67, 41755), (68, 41761), (69, 41764), (70, 41770), (72, 41800), (75, 41902), (79, 41959), (82, 42010), (84, 42046), (85, 42058), (86, 42091), (88, 42106), (100, 42256),

Gene: Obutu_46 Start: 40295, Stop: 41518, Start Num: 22

Candidate Starts for Obutu_46:

(Start: 13 @40181 has 1 MA's), (14, 40184), (Start: 22 @40295 has 16 MA's), (Start: 26 @40316 has 1 MA's), (29, 40343), (30, 40358), (31, 40400), (Start: 38 @40451 has 1 MA's), (44, 40541), (46, 40556), (50, 40670), (57, 40772), (65, 40934), (67, 40979), (68, 40985), (69, 40988), (70, 40994), (72, 41024), (75, 41126), (79, 41183), (82, 41234), (84, 41270), (85, 41282), (86, 41315), (88, 41330), (100, 41480),

Gene: Ogotogo_30 Start: 25685, Stop: 26878, Start Num: 28

Candidate Starts for Ogotogo_30:

(Start: 28 @25685 has 23 MA's), (34, 25769), (46, 25919), (49, 25973), (56, 26114), (61, 26195), (67, 26321), (68, 26327), (69, 26330), (74, 26441), (77, 26483), (80, 26522), (81, 26537), (82, 26573), (83, 26582), (91, 26696), (94, 26738), (95, 26747), (98, 26804), (99, 26807),

Gene: OhShagHennessey_25 Start: 24340, Stop: 25512, Start Num: 23

Candidate Starts for OhShagHennessey_25:

(21, 24310), (Start: 23 @24340 has 26 MA's), (57, 24787), (61, 24865), (63, 24910), (67, 24985), (72, 25030), (74, 25105), (75, 25132), (77, 25150), (79, 25186), (80, 25189), (83, 25249), (86, 25300), (88, 25315), (93, 25384), (96, 25408),

Gene: OrangeOswald_46 Start: 40258, Stop: 41535, Start Num: 18

Candidate Starts for OrangeOswald_46:

(17, 40240), (Start: 18 @40258 has 10 MA's), (19, 40261), (Start: 20 @40270 has 14 MA's), (Start: 22 @40312 has 16 MA's), (Start: 26 @40333 has 1 MA's), (29, 40360), (30, 40375), (31, 40417), (Start: 38 @40468 has 1 MA's), (44, 40558), (46, 40573), (50, 40687), (57, 40789), (65, 40951), (67, 40996), (68, 41002), (69, 41005), (70, 41011), (72, 41041), (75, 41143), (79, 41200), (82, 41251), (84, 41287), (85, 41299), (86, 41332), (88, 41347), (100, 41497),

Gene: Phaedrus_44 Start: 40388, Stop: 41455, Start Num: 38

Candidate Starts for Phaedrus_44:

(17, 40160), (Start: 18 @40178 has 10 MA's), (19, 40181), (Start: 20 @40190 has 14 MA's), (Start: 22 @40232 has 16 MA's), (Start: 26 @40253 has 1 MA's), (29, 40280), (30, 40295), (31, 40337), (Start: 38 @40388 has 1 MA's), (44, 40478), (46, 40493), (50, 40607), (57, 40709), (65, 40871), (67, 40916),

(68, 40922), (69, 40925), (70, 40931), (72, 40961), (75, 41063), (79, 41120), (82, 41171), (84, 41207), (85, 41219), (86, 41252), (88, 41267), (100, 41417),

Gene: Phayeta_47 Start: 40177, Stop: 41400, Start Num: 22

Candidate Starts for Phayeta_47:

(Start: 13 @40063 has 1 MA's), (14, 40066), (Start: 22 @40177 has 16 MA's), (Start: 26 @40198 has 1 MA's), (29, 40225), (30, 40240), (31, 40282), (Start: 38 @40333 has 1 MA's), (44, 40423), (46, 40438), (50, 40552), (57, 40654), (65, 40816), (67, 40861), (68, 40867), (69, 40870), (70, 40876), (72, 40906), (75, 41008), (79, 41065), (82, 41116), (84, 41152), (85, 41164), (86, 41197), (88, 41212), (100, 41362),

Gene: Philly_45 Start: 40109, Stop: 41386, Start Num: 18

Candidate Starts for Philly_45:

(17, 40091), (Start: 18 @40109 has 10 MA's), (19, 40112), (Start: 20 @40121 has 14 MA's), (Start: 22 @40163 has 16 MA's), (Start: 26 @40184 has 1 MA's), (29, 40211), (30, 40226), (31, 40268), (Start: 38 @40319 has 1 MA's), (44, 40409), (46, 40424), (50, 40538), (57, 40640), (65, 40802), (67, 40847), (68, 40853), (69, 40856), (70, 40862), (72, 40892), (75, 40994), (79, 41051), (82, 41102), (84, 41138), (85, 41150), (86, 41183), (88, 41198), (100, 41348),

Gene: Phlyer_46 Start: 41009, Stop: 42274, Start Num: 20

Candidate Starts for Phlyer_46:

(17, 40979), (Start: 18 @40997 has 10 MA's), (19, 41000), (Start: 20 @41009 has 14 MA's), (Start: 22 @41051 has 16 MA's), (Start: 26 @41072 has 1 MA's), (29, 41099), (30, 41114), (31, 41156), (Start: 38 @41207 has 1 MA's), (44, 41297), (46, 41312), (50, 41426), (57, 41528), (65, 41690), (67, 41735), (68, 41741), (69, 41744), (70, 41750), (72, 41780), (75, 41882), (79, 41939), (82, 41990), (84, 42026), (85, 42038), (86, 42071), (88, 42086), (100, 42236),

Gene: Pipefish_48 Start: 41704, Stop: 42927, Start Num: 22

Candidate Starts for Pipefish_48:

(Start: 13 @41590 has 1 MA's), (14, 41593), (Start: 22 @41704 has 16 MA's), (Start: 26 @41725 has 1 MA's), (29, 41752), (30, 41767), (31, 41809), (Start: 38 @41860 has 1 MA's), (44, 41950), (46, 41965), (50, 42079), (57, 42181), (65, 42343), (67, 42388), (68, 42394), (70, 42403), (72, 42433), (75, 42535), (79, 42592), (82, 42643), (84, 42679), (85, 42691), (86, 42724), (88, 42739), (100, 42889),

Gene: Pippy_24 Start: 22504, Stop: 23664, Start Num: 28

Candidate Starts for Pippy_24:

(7, 22234), (Start: 28 @22504 has 23 MA's), (34, 22588), (46, 22738), (49, 22792), (52, 22885), (54, 22915), (56, 22936), (61, 23014), (67, 23140), (68, 23146), (74, 23260), (77, 23302), (78, 23335), (80, 23341), (83, 23401),

Gene: QuickMath_31 Start: 27678, Stop: 28868, Start Num: 28

Candidate Starts for QuickMath_31:

(Start: 28 @27678 has 23 MA's), (34, 27762), (46, 27912), (49, 27966), (56, 28107), (61, 28185), (67, 28311), (68, 28317), (72, 28356), (73, 28416), (74, 28431), (77, 28473), (79, 28509), (80, 28512), (82, 28563), (83, 28572), (91, 28686), (94, 28728), (95, 28737), (98, 28794), (99, 28797),

Gene: RagingRooster_46 Start: 40271, Stop: 41536, Start Num: 20

Candidate Starts for RagingRooster_46:

(17, 40241), (Start: 18 @40259 has 10 MA's), (19, 40262), (Start: 20 @40271 has 14 MA's), (Start: 22 @40313 has 16 MA's), (Start: 26 @40334 has 1 MA's), (29, 40361), (30, 40376), (31, 40418), (Start: 38 @40469 has 1 MA's), (44, 40559), (46, 40574), (50, 40688), (57, 40790), (65, 40952), (67, 40997), (68, 41003), (69, 41006), (70, 41012), (72, 41042), (75, 41144), (79, 41201), (82, 41252), (84, 41288), (85, 41300), (86, 41333), (88, 41348), (100, 41498),

Gene: Rita1961_46 Start: 40296, Stop: 41519, Start Num: 22

Candidate Starts for Rita1961_46:

(Start: 13 @40182 has 1 MA's), (14, 40185), (Start: 22 @40296 has 16 MA's), (Start: 26 @40317 has 1 MA's), (29, 40344), (30, 40359), (31, 40401), (Start: 38 @40452 has 1 MA's), (44, 40542), (46, 40557), (50, 40671), (57, 40773), (65, 40935), (67, 40980), (68, 40986), (69, 40989), (70, 40995), (72, 41025), (75, 41127), (79, 41184), (82, 41235), (84, 41271), (85, 41283), (86, 41316), (88, 41331), (100, 41481),

Gene: RomaT_46 Start: 41044, Stop: 42309, Start Num: 20

Candidate Starts for RomaT_46:

(17, 41014), (Start: 18 @41032 has 10 MA's), (19, 41035), (Start: 20 @41044 has 14 MA's), (Start: 22 @41086 has 16 MA's), (Start: 26 @41107 has 1 MA's), (29, 41134), (30, 41149), (31, 41191), (Start: 38 @41242 has 1 MA's), (44, 41332), (46, 41347), (50, 41461), (57, 41563), (65, 41725), (67, 41770), (68, 41776), (69, 41779), (70, 41785), (72, 41815), (75, 41917), (79, 41974), (82, 42025), (84, 42061), (85, 42073), (86, 42106), (88, 42121), (100, 42271),

Gene: Rose5_25 Start: 24375, Stop: 25547, Start Num: 23

Candidate Starts for Rose5_25:

(21, 24345), (Start: 23 @24375 has 26 MA's), (57, 24822), (61, 24900), (63, 24945), (67, 25020), (72, 25065), (74, 25140), (75, 25167), (77, 25185), (79, 25221), (80, 25224), (83, 25284), (86, 25335), (88, 25350), (93, 25419), (96, 25443), (102, 25503),

Gene: Rumpelstiltskin_27 Start: 25354, Stop: 26523, Start Num: 23

Candidate Starts for Rumpelstiltskin_27:

(Start: 23 @25354 has 26 MA's), (39, 25522), (45, 25606), (49, 25666), (56, 25795), (61, 25876), (67, 25996), (68, 26002), (75, 26143), (77, 26161), (79, 26197), (83, 26260), (92, 26392), (93, 26395), (96, 26419),

Gene: Sassafras_30 Start: 26444, Stop: 27607, Start Num: 28

Candidate Starts for Sassafras_30:

(Start: 28 @26444 has 23 MA's), (34, 26528), (46, 26678), (49, 26732), (56, 26873), (61, 26951), (67, 27077), (68, 27083), (72, 27122), (73, 27182), (74, 27197), (77, 27239), (79, 27275), (80, 27278), (82, 27329), (83, 27338), (91, 27452),

Gene: Silverleaf_25 Start: 24375, Stop: 25547, Start Num: 23

Candidate Starts for Silverleaf_25:

(21, 24345), (Start: 23 @24375 has 26 MA's), (57, 24822), (61, 24900), (63, 24945), (67, 25020), (72, 25065), (74, 25140), (75, 25167), (77, 25185), (79, 25221), (80, 25224), (83, 25284), (86, 25335), (88, 25350), (93, 25419), (96, 25443), (102, 25503),

Gene: SlippinJimmy_46 Start: 41078, Stop: 42301, Start Num: 22

Candidate Starts for SlippinJimmy_46:

(Start: 13 @40964 has 1 MA's), (14, 40967), (Start: 22 @41078 has 16 MA's), (Start: 26 @41099 has 1 MA's), (29, 41126), (30, 41141), (31, 41183), (Start: 38 @41234 has 1 MA's), (44, 41324), (46, 41339), (50, 41453), (57, 41555), (65, 41717), (67, 41762), (68, 41768), (69, 41771), (70, 41777), (72, 41807), (75, 41909), (79, 41966), (82, 42017), (84, 42053), (85, 42065), (86, 42098), (88, 42113), (100, 42263),

Gene: Stap_31 Start: 26476, Stop: 27678, Start Num: 28

Candidate Starts for Stap_31:

(Start: 28 @26476 has 23 MA's), (34, 26560), (46, 26710), (49, 26764), (56, 26905), (61, 26983), (67, 27109), (68, 27115), (72, 27154), (73, 27214), (74, 27229), (77, 27271), (79, 27307), (80, 27310), (82,

27361), (83, 27370), (94, 27535), (96, 27553), (99, 27604), (102, 27613),

Gene: SynergyX_46 Start: 40271, Stop: 41536, Start Num: 20

Candidate Starts for SynergyX_46:

(17, 40241), (Start: 18 @40259 has 10 MA's), (19, 40262), (Start: 20 @40271 has 14 MA's), (Start: 22 @40313 has 16 MA's), (Start: 26 @40334 has 1 MA's), (29, 40361), (30, 40376), (31, 40418), (Start: 38 @40469 has 1 MA's), (44, 40559), (46, 40574), (50, 40688), (57, 40790), (65, 40952), (67, 40997), (68, 41003), (69, 41006), (70, 41012), (72, 41042), (75, 41144), (79, 41201), (82, 41252), (84, 41288), (85, 41300), (86, 41333), (88, 41348), (100, 41498),

Gene: TootsiePop_31 Start: 26205, Stop: 27407, Start Num: 28

Candidate Starts for TootsiePop_31:

(Start: 28 @26205 has 23 MA's), (34, 26289), (46, 26439), (49, 26493), (56, 26634), (61, 26715), (67, 26841), (68, 26847), (69, 26850), (72, 26886), (74, 26961), (77, 27003), (79, 27039), (82, 27093), (83, 27102), (88, 27168), (91, 27225), (94, 27267), (95, 27276), (97, 27318), (98, 27333), (99, 27336),

Gene: Tootsieroll_31 Start: 26372, Stop: 27574, Start Num: 28

Candidate Starts for Tootsieroll_31:

(Start: 28 @26372 has 23 MA's), (34, 26456), (46, 26606), (49, 26660), (56, 26801), (61, 26879), (67, 27005), (68, 27011), (72, 27050), (73, 27110), (74, 27125), (77, 27167), (79, 27203), (80, 27206), (82, 27257), (83, 27266), (94, 27431), (96, 27449), (99, 27500), (102, 27509),

Gene: Tydolla_46 Start: 41005, Stop: 42270, Start Num: 20

Candidate Starts for Tydolla_46:

(17, 40975), (Start: 18 @40993 has 10 MA's), (19, 40996), (Start: 20 @41005 has 14 MA's), (Start: 22 @41047 has 16 MA's), (Start: 26 @41068 has 1 MA's), (29, 41095), (30, 41110), (31, 41152), (Start: 38 @41203 has 1 MA's), (44, 41293), (46, 41308), (50, 41422), (57, 41524), (65, 41686), (67, 41731), (68, 41737), (69, 41740), (70, 41746), (72, 41776), (75, 41878), (79, 41935), (82, 41986), (84, 42022), (85, 42034), (86, 42067), (88, 42082), (100, 42232),

Gene: Tyson_25 Start: 24375, Stop: 25547, Start Num: 23

Candidate Starts for Tyson_25:

(21, 24345), (Start: 23 @24375 has 26 MA's), (57, 24822), (61, 24900), (63, 24945), (67, 25020), (72, 25065), (74, 25140), (75, 25167), (77, 25185), (79, 25221), (80, 25224), (83, 25284), (86, 25335), (88, 25350), (93, 25419), (96, 25443), (102, 25503),

Gene: UPIE_25 Start: 24373, Stop: 25545, Start Num: 23

Candidate Starts for UPIE_25:

(21, 24343), (Start: 23 @24373 has 26 MA's), (57, 24820), (61, 24898), (63, 24943), (67, 25018), (72, 25063), (74, 25138), (75, 25165), (77, 25183), (79, 25219), (80, 25222), (83, 25282), (86, 25333), (88, 25348), (93, 25417), (96, 25441), (102, 25501),

Gene: VRedHorse_30 Start: 26539, Stop: 27690, Start Num: 28

Candidate Starts for VRedHorse_30:

(6, 26266), (8, 26287), (Start: 28 @26539 has 23 MA's), (34, 26623), (46, 26773), (49, 26827), (56, 26968), (61, 27046), (67, 27172), (68, 27178), (72, 27217), (73, 27277), (74, 27292), (77, 27334), (79, 27370), (80, 27373), (82, 27424), (83, 27433), (91, 27547), (99, 27658), (104, 27676), (106, 27679),

Gene: Wamburgxpress_25 Start: 24388, Stop: 25560, Start Num: 23

Candidate Starts for Wamburgxpress_25:

(21, 24358), (Start: 23 @24388 has 26 MA's), (57, 24835), (61, 24913), (63, 24958), (67, 25033), (72, 25078), (74, 25153), (75, 25180), (77, 25198), (79, 25234), (80, 25237), (83, 25297), (86, 25348), (88, 25363), (93, 25432), (96, 25456), (102, 25516),

Gene: Wyatt2_25 Start: 24375, Stop: 25547, Start Num: 23

Candidate Starts for Wyatt2_25:

(21, 24345), (Start: 23 @24375 has 26 MA's), (57, 24822), (61, 24900), (63, 24945), (67, 25020), (72, 25065), (74, 25140), (75, 25167), (77, 25185), (79, 25221), (80, 25224), (83, 25284), (86, 25335), (88, 25350), (93, 25419), (96, 25443), (102, 25503),

Gene: Yahalom_46 Start: 40281, Stop: 41546, Start Num: 20

Candidate Starts for Yahalom_46:

(17, 40251), (Start: 18 @40269 has 10 MA's), (19, 40272), (Start: 20 @40281 has 14 MA's), (Start: 22 @40323 has 16 MA's), (Start: 26 @40344 has 1 MA's), (29, 40371), (30, 40386), (31, 40428), (Start: 38 @40479 has 1 MA's), (44, 40569), (46, 40584), (50, 40698), (57, 40800), (65, 40962), (67, 41007), (68, 41013), (69, 41016), (70, 41022), (72, 41052), (75, 41154), (79, 41211), (82, 41262), (84, 41298), (85, 41310), (86, 41343), (88, 41358), (100, 41508),

Gene: Yinz_46 Start: 40307, Stop: 41572, Start Num: 20

Candidate Starts for Yinz_46:

(17, 40277), (Start: 18 @40295 has 10 MA's), (19, 40298), (Start: 20 @40307 has 14 MA's), (Start: 22 @40349 has 16 MA's), (Start: 26 @40370 has 1 MA's), (29, 40397), (30, 40412), (31, 40454), (Start: 38 @40505 has 1 MA's), (44, 40595), (46, 40610), (50, 40724), (57, 40826), (65, 40988), (67, 41033), (68, 41039), (69, 41042), (70, 41048), (72, 41078), (75, 41180), (79, 41237), (82, 41288), (84, 41324), (85, 41336), (86, 41369), (88, 41384), (100, 41534),

Gene: Yoshi_37 Start: 25847, Stop: 27094, Start Num: 27

Candidate Starts for Yoshi_37:

(24, 25826), (Start: 27 @25847 has 1 MA's), (32, 25928), (42, 26060), (43, 26063), (47, 26108), (48, 26132), (51, 26222), (56, 26303), (60, 26384), (64, 26438), (65, 26468), (67, 26510), (68, 26516), (69, 26519), (72, 26555), (74, 26630), (77, 26672), (79, 26708), (80, 26711), (82, 26762), (83, 26771), (95, 26933), (107, 27047), (108, 27071), (109, 27080),

Gene: Zakai_27 Start: 25342, Stop: 26511, Start Num: 23

Candidate Starts for Zakai_27:

(Start: 23 @25342 has 26 MA's), (39, 25510), (45, 25594), (49, 25654), (53, 25756), (56, 25783), (59, 25852), (61, 25864), (67, 25984), (68, 25990), (75, 26131), (77, 26149), (79, 26185), (83, 26248), (87, 26302), (92, 26380), (93, 26383), (96, 26407),

Gene: Zaria_25 Start: 24389, Stop: 25561, Start Num: 23

Candidate Starts for Zaria_25:

(21, 24359), (Start: 23 @24389 has 26 MA's), (57, 24836), (61, 24914), (63, 24959), (67, 25034), (72, 25079), (74, 25154), (75, 25181), (77, 25199), (79, 25235), (80, 25238), (83, 25298), (86, 25349), (88, 25364), (93, 25433), (96, 25457), (102, 25517),