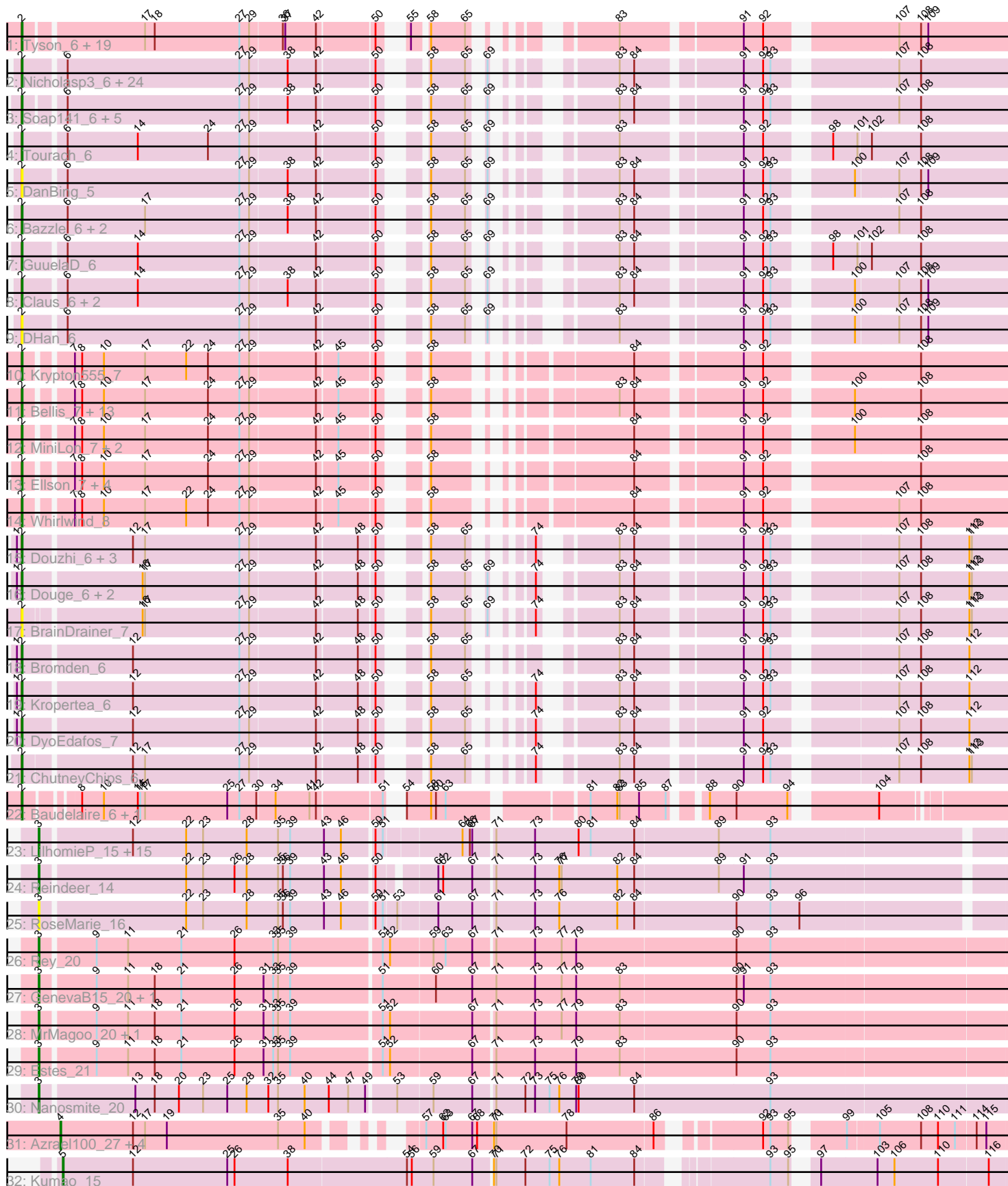


Pham 311355



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 311355 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311355 has 130 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Tyson_6, Wyatt2_6, Zaria_6, CicholasNage_6, LeBron_6, AvadaKedavra_6, JoeDirt_6, UPIE_6, Wamburggrxpress_6, Appletree2_6, Rose5_6, Calm_6, MAckerman_6, DirkDirk_6, Poochiewood_6, Silverleaf_6, Enceladus_6, Halena_6, Acquire49_6, OhShagHennessy_6
- Track 2 : Nicholasp3_6, Underpass_6, Vetrrix_6, BobsGarage_6, Lynnae_6, Netyap_6, Miley16_6, Gabriela_6, LilDestine_6, Faith1_6, Winky_6, Kahlid_6, Finemlucis_6, Zakai_6, Lewan_6, Gardann_6, DrSeegs_6, Wilder_6, Breezona_6, SoJulia_6, MkaliMitinis3_6, Itos_6, BigCheese_6, Crossroads_6, Rumpelstiltskin_6
- Track 3 : Soap141_6, OverPar_6, Sarshaun_6, Loadrie_6, Hafay_6, Wigglewiggle_6
- Track 4 : Tourach_6
- Track 5 : DanBing_5
- Track 6 : Bazzle_6, Archie_6, Rossetti_6
- Track 7 : GuuelaD_6
- Track 8 : Claus_6, ZhongYanYuan_5, Baoshan_5
- Track 9 : DHan_6
- Track 10 : Krypton555_7
- Track 11 : Bellis_7, Snenia_7, Kingsolomon_7, Lumos_7, Nicholas_7, Moostard_7, Red305_7, MsGreen_7, Finnry_7, Jubie_7, Samty_7, Clautastrophe_7, Jobypre_7, TriFive_7
- Track 12 : MiniLon_7, Lolly9_7, MiniMac_7
- Track 13 : Ellson_7, DuncansLeg_7, BourbonZero_6, KirDoubleO7_5, LiyuLake_7
- Track 14 : Whirlwind_8
- Track 15 : Douzhi_6, PYPDinur_6, Chaser_6, Sheng711_6
- Track 16 : Douge_6, Quby_6, FarmResident_6
- Track 17 : BrainDrainer_7
- Track 18 : Bromden_6
- Track 19 : Kropertea_6
- Track 20 : DyoEdafos_7
- Track 21 : ChutneyChips_6
- Track 22 : Baudelaire_6, Aegeus_6
- Track 23 : LilhomieP_15, Auspice_16, Bricole_16, TpudiCK_17, IPhane7_16, KleverKiS_16, Diminimus_17, Izel_17, Glaske16_17, Skinny_17, FreakyGoo_17, Dulcita_17, PegLeg_16, TyDawg_16, Bongo_16, SlimJimmy_15
- Track 24 : Reindeer_14
- Track 25 : RoseMarie_16
- Track 26 : Rey_20
- Track 27 : GenevaB15_20, Aziz_20

- Track 28 : MrMagoo_20, GardenSalsa_20
- Track 29 : Estes_21
- Track 30 : Nanosmite_20
- Track 31 : Azrael100_27, EniyanLRS_25, MaryV_28, Cosmo_28, Wildcat_28
- Track 32 : Kumao_15

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

The start number called the most often in the published annotations is 2, it was called in 78 of the 106 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49_6, Aegeus_6, Appletree2_6, Archie_6, AvadaKedavra_6, Baoshan_5, Baudelaire_6, Bazzle_6, Bellis_7, BigCheese_6, BobsGarage_6, BourbonZero_6, BrainDrainer_7, Breezona_6, Bromden_6, Calm_6, Chaser_6, ChutneyChips_6, CicholasNage_6, Claus_6, Clautastrophe_7, Crossroads_6, DHan_6, DanBing_5, DirkDirk_6, Douge_6, Douzhi_6, DrSeegs_6, DuncansLeg_7, DyoEdafos_7, Ellson_7, Enceladus_6, Faith1_6, FarmResident_6, Finemlucis_6, Finnry_7, Gabriela_6, Gardann_6, GuuelaD_6, Hafay_6, Halena_6, Itos_6, Jobypre_7, JoeDirt_6, Jubie_7, Kahlid_6, Kingsolomon_7, KirDoubleO7_5, Kropertea_6, Krypton555_7, LeBron_6, Lewan_6, LilDestine_6, LiyuLake_7, Loadrie_6, Lolly9_7, Lumos_7, Lynnae_6, MAckerman_6, Miley16_6, MiniLon_7, MiniMac_7, MkaliMitinis3_6, Moostard_7, MsGreen_7, Netyap_6, Nicholas_7, Nicholasp3_6, OhShagHennessy_6, OverPar_6, PYPDinur_6, Poochiewood_6, Quby_6, Red305_7, Rose5_6, Rossetti_6, Rumpelstiltskin_6, Samty_7, Sarshaun_6, Sheng711_6, Silverleaf_6, Snenia_7, SoJulia_6, Soap141_6, Tourach_6, TriFive_7, Tyson_6, UPIE_6, Underpass_6, Vetrix_6, Wamburggrxpress_6, Whirlwind_8, Wigglewiggle_6, Wilder_6, Winky_6, Wyatt2_6, Zakai_6, Zaria_6, ZhongYanYuan_5,

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

-

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

- Auspice_16, Aziz_20, Azrael100_27, Bongo_16, Bricole_16, Cosmo_28, Diminimus_17, Dulcita_17, EniyanLRS_25, Estes_21, FreakyGoo_17, GardenSalsa_20, GenevaB15_20, Glaske16_17, IPHane7_16, Izel_17, KleverKiS_16, Kumao_15, LilhomieP_15, MaryV_28, MrMagoo_20, Nanosmite_20, PegLeg_16, Reindeer_14, Rey_20, RoseMarie_16, Skinny_17, SlimJimmy_15, TpudiCK_17, TyDawg_16, Wildcat_28,

Summary by start number:

Start 2:

- Found in 99 of 130 (76.2%) of genes in pham
- Manual Annotations of this start: 78 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acquire49_6 (L1), Aegeus_6 (L5), Appletree2_6 (L1), Archie_6 (L2), AvadaKedavra_6 (L1), Baoshan_5 (L2), Baudelaire_6 (L5), Bazzle_6 (L2), Bellis_7 (L3), BigCheese_6 (L2), BobsGarage_6 (L2), BourbonZero_6 (L3), BrainDrainer_7 (L4), Breezona_6 (L2), Bromden_6 (L4),

Calm_6 (L1), Chaser_6 (L4), ChutneyChips_6 (L4), CicholasNage_6 (L1), Claus_6 (L2), Clautastrophe_7 (L3), Crossroads_6 (L2), DHan_6 (L2), DanBing_5 (L2), DirkDirk_6 (L1), Douge_6 (L4), Douzhi_6 (L4), DrSeegs_6 (L2), DuncansLeg_7 (L3), DyoEdafos_7 (L4), Ellson_7 (L3), Enceladus_6 (L1), Faith1_6 (L2), FarmResident_6 (L4), Finemlucis_6 (L2), Finnry_7 (L3), Gabriela_6 (L2), Gardann_6 (L2), GuuelaD_6 (L2), Hafay_6 (L2), Halena_6 (L1), Itos_6 (L2), Jobypre_7 (L3), JoeDirt_6 (L1), Jubie_7 (L3), Kahlid_6 (L2), Kingsolomon_7 (L3), KirDoubleO7_5 (L3), Kropertea_6 (L4), Krypton555_7 (L3), LeBron_6 (L1), Lewan_6 (L2), LilDestine_6 (L2), LiyuLake_7 (L3), Loadrie_6 (L2), Lolly9_7 (L3), Lumos_7 (L3), Lynnae_6 (L2), MAckerman_6 (L1), Miley16_6 (L2), MiniLon_7 (L3), MiniMac_7 (L3), MkaliMitinis3_6 (L2), Moostard_7 (L3), MsGreen_7 (L3), Netyap_6 (L2), Nicholas_7 (L3), Nicholasp3_6 (L2), OhShagHennessy_6 (L1), OverPar_6 (L2), PYPDinur_6 (L4), Poochiewood_6 (L1), Quby_6 (L4), Red305_7 (L3), Rose5_6 (L1), Rossetti_6 (L2), Rumpelstiltskin_6 (L2), Samty_7 (L3), Sarshaun_6 (L2), Sheng711_6 (L4), Silverleaf_6 (L1), Snenia_7 (L3), SoJulia_6 (L2), Soap141_6 (L2), Tourach_6 (L2), TriFive_7 (L3), Tyson_6 (L1), UPIE_6 (L1), Underpass_6 (L2), Vetrix_6 (L2), Wamburggrxpress_6 (L1), Whirlwind_8 (L3), Wigglewiggles_6 (L2), Wilder_6 (L2), Winky_6 (L2), Wyatt2_6 (L1), Zakai_6 (L2), Zaria_6 (L1), ZhongYanYuan_5 (L2),

Start 3:

- Found in 25 of 130 (19.2%) of genes in pham
- Manual Annotations of this start: 22 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Auspice_16 (M1), Aziz_20 (M2), Bongo_16 (M1), Bricole_16 (M1), Diminimus_17 (M1), Dulcita_17 (M1), Estes_21 (M2), FreakyGoo_17 (M1), GardenSalsa_20 (M2), GenevaB15_20 (M2), Glaske16_17 (M1), IPhane7_16 (M1), Izel_17 (M1), KleverKiS_16 (M1), LilhomieP_15 (M1), MrMagoo_20 (M2), Nanosmite_20 (M3), PegLeg_16 (M1), Reindeer_14 (M1), Rey_20 (M2), RoseMarie_16 (M1), Skinny_17 (M1), SlimJimmy_15 (M1), TpudiCK_17 (M1), TyDawg_16 (M1),

Start 4:

- Found in 5 of 130 (3.8%) of genes in pham
- Manual Annotations of this start: 5 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100_27 (V), Cosmo_28 (V), EniyanLRS_25 (V), MaryV_28 (V), Wildcat_28 (V),

Start 5:

- Found in 1 of 130 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao_15 (singleton),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, L1, L4, L5, L2, L3, M3, V, M1, M2,

Info for manual annotations of cluster L1:

- Start number 2 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 2 was manually annotated 32 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 2 was manually annotated 19 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 2 was manually annotated 6 times for cluster L4.

Info for manual annotations of cluster L5:

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

Info for manual annotations of cluster M1:

- Start number 3 was manually annotated 15 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 3 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 3 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 4 was manually annotated 5 times for cluster V.

Gene Information:

Gene: Acquire49_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Acquire49_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: Aegeus_6 Start: 3860, Stop: 4954, Start Num: 2

Candidate Starts for Aegeus_6:

(Start: 2 @3860 has 78 MA's), (8, 3914), (10, 3941), (14, 3983), (15, 3986), (17, 3992), (25, 4094), (27, 4109), (30, 4130), (34, 4151), (41, 4193), (42, 4199), (51, 4274), (54, 4277), (58, 4307), (60, 4313), (63, 4325), (81, 4475), (82, 4508), (83, 4511), (85, 4535), (87, 4568), (88, 4598), (90, 4631), (94, 4694), (104, 4781),

Gene: Appletree2_6 Start: 4294, Stop: 5349, Start Num: 2

Candidate Starts for Appletree2_6:

(Start: 2 @4294 has 78 MA's), (17, 4432), (18, 4444), (27, 4549), (29, 4561), (36, 4600), (37, 4603), (42, 4639), (50, 4705), (55, 4720), (58, 4735), (65, 4777), (83, 4879), (91, 5014), (92, 5038), (107, 5179), (108, 5206), (109, 5215),

Gene: Archie_6 Start: 4276, Stop: 5343, Start Num: 2

Candidate Starts for Archie_6:

(Start: 2 @4276 has 78 MA's), (6, 4333), (17, 4429), (27, 4546), (29, 4558), (38, 4603), (42, 4636), (50, 4702), (58, 4732), (65, 4774), (69, 4783), (83, 4876), (84, 4894), (91, 5011), (92, 5035), (93, 5044), (107, 5176), (108, 5203),

Gene: Auspice_16 Start: 7882, Stop: 9042, Start Num: 3

Candidate Starts for Auspice_16:

(Start: 3 @7882 has 22 MA's), (12, 7990), (22, 8056), (23, 8077), (28, 8131), (35, 8170), (39, 8185), (43, 8227), (46, 8248), (50, 8284), (51, 8293), (64, 8383), (66, 8392), (67, 8395), (71, 8419), (73, 8467), (80, 8521), (81, 8536), (84, 8590), (89, 8692), (93, 8755),

Gene: AvadaKedavra_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for AvadaKedavra_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: Aziz_20 Start: 8460, Stop: 9641, Start Num: 3

Candidate Starts for Aziz_20:

(Start: 3 @8460 has 22 MA's), (9, 8523), (11, 8562), (18, 8595), (21, 8628), (26, 8694), (31, 8730), (33, 8742), (35, 8748), (39, 8763), (51, 8871), (60, 8934), (67, 8979), (71, 9009), (73, 9057), (77, 9090), (79, 9108), (83, 9162), (90, 9303), (91, 9312), (93, 9345),

Gene: Azrael100_27 Start: 11178, Stop: 12212, Start Num: 4

Candidate Starts for Azrael100_27:

(Start: 4 @11178 has 5 MA's), (12, 11268), (17, 11283), (19, 11310), (35, 11448), (40, 11481), (57, 11559), (62, 11580), (63, 11583), (67, 11616), (68, 11622), (70, 11640), (71, 11643), (78, 11730), (86, 11835), (92, 11934), (93, 11943), (95, 11964), (99, 12009), (105, 12045), (108, 12096), (110, 12117), (111, 12138), (114, 12162), (115, 12174),

Gene: Baoshan_5 Start: 4143, Stop: 5198, Start Num: 2

Candidate Starts for Baoshan_5:

(Start: 2 @4143 has 78 MA's), (6, 4191), (14, 4278), (27, 4404), (29, 4416), (38, 4461), (42, 4494), (50, 4560), (58, 4590), (65, 4632), (69, 4641), (83, 4734), (84, 4752), (91, 4869), (92, 4893), (93, 4902), (100, 4980), (107, 5031), (108, 5058), (109, 5067),

Gene: Baudelaire_6 Start: 3860, Stop: 4954, Start Num: 2

Candidate Starts for Baudelaire_6:

(Start: 2 @3860 has 78 MA's), (8, 3914), (10, 3941), (14, 3983), (15, 3986), (17, 3992), (25, 4094), (27, 4109), (30, 4130), (34, 4151), (41, 4193), (42, 4199), (51, 4274), (54, 4277), (58, 4307), (60, 4313), (63, 4325), (81, 4475), (82, 4508), (83, 4511), (85, 4535), (87, 4568), (88, 4598), (90, 4631), (94, 4694), (104, 4781),

Gene: Bazzle_6 Start: 4252, Stop: 5319, Start Num: 2

Candidate Starts for Bazzle_6:

(Start: 2 @4252 has 78 MA's), (6, 4309), (17, 4405), (27, 4522), (29, 4534), (38, 4579), (42, 4612), (50, 4678), (58, 4708), (65, 4750), (69, 4759), (83, 4852), (84, 4870), (91, 4987), (92, 5011), (93, 5020), (107, 5152), (108, 5179),

Gene: Bellis_7 Start: 4412, Stop: 5482, Start Num: 2

Candidate Starts for Bellis_7:

(Start: 2 @4412 has 78 MA's), (7, 4460), (8, 4469), (10, 4496), (17, 4547), (24, 4625), (27, 4664), (29, 4676), (42, 4754), (45, 4778), (50, 4820), (58, 4850), (83, 5018), (84, 5036), (91, 5153), (92, 5177), (100, 5264), (108, 5345),

Gene: BigCheese_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for BigCheese_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202),

(108, 5229),

Gene: BobsGarage_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for BobsGarage_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Bongo_16 Start: 7882, Stop: 9042, Start Num: 3

Candidate Starts for Bongo_16:

(Start: 3 @7882 has 22 MA's), (12, 7990), (22, 8056), (23, 8077), (28, 8131), (35, 8170), (39, 8185), (43, 8227), (46, 8248), (50, 8284), (51, 8293), (64, 8383), (66, 8392), (67, 8395), (71, 8419), (73, 8467), (80, 8521), (81, 8536), (84, 8590), (89, 8692), (93, 8755),

Gene: BourbonZero_6 Start: 4417, Stop: 5487, Start Num: 2

Candidate Starts for BourbonZero_6:

(Start: 2 @4417 has 78 MA's), (7, 4465), (8, 4474), (10, 4501), (17, 4552), (24, 4630), (27, 4669), (29, 4681), (42, 4759), (45, 4783), (50, 4825), (58, 4855), (84, 5041), (91, 5158), (92, 5182), (108, 5350),

Gene: BrainDrainer_7 Start: 4133, Stop: 5182, Start Num: 2

Candidate Starts for BrainDrainer_7:

(Start: 2 @4133 has 78 MA's), (16, 4268), (17, 4271), (27, 4388), (29, 4400), (42, 4478), (48, 4526), (50, 4544), (58, 4574), (65, 4616), (69, 4625), (74, 4649), (83, 4718), (84, 4736), (91, 4853), (92, 4877), (93, 4886), (107, 5015), (108, 5042), (112, 5102), (113, 5105),

Gene: Breezona_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Breezona_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Bricole_16 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for Bricole_16:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: Bromden_6 Start: 4032, Stop: 5087, Start Num: 2

Candidate Starts for Bromden_6:

(1, 4026), (Start: 2 @4032 has 78 MA's), (12, 4161), (27, 4293), (29, 4305), (42, 4383), (48, 4431), (50, 4449), (58, 4479), (65, 4521), (83, 4623), (84, 4641), (91, 4758), (92, 4782), (93, 4791), (107, 4920), (108, 4947), (112, 5007),

Gene: Calm_6 Start: 4321, Stop: 5376, Start Num: 2

Candidate Starts for Calm_6:

(Start: 2 @4321 has 78 MA's), (17, 4459), (18, 4471), (27, 4576), (29, 4588), (36, 4627), (37, 4630), (42, 4666), (50, 4732), (55, 4747), (58, 4762), (65, 4804), (83, 4906), (91, 5041), (92, 5065), (107, 5206), (108, 5233), (109, 5242),

Gene: Chaser_6 Start: 4033, Stop: 5088, Start Num: 2

Candidate Starts for Chaser_6:

(1, 4027), (Start: 2 @4033 has 78 MA's), (12, 4162), (17, 4177), (27, 4294), (29, 4306), (42, 4384), (48, 4432), (50, 4450), (58, 4480), (65, 4522), (74, 4555), (83, 4624), (84, 4642), (91, 4759), (92, 4783), (93,

4792), (107, 4921), (108, 4948), (112, 5008), (113, 5011),

Gene: ChutneyChips_6 Start: 4033, Stop: 5085, Start Num: 2

Candidate Starts for ChutneyChips_6:

(Start: 2 @4033 has 78 MA's), (12, 4159), (17, 4174), (27, 4291), (29, 4303), (42, 4381), (48, 4429), (50, 4447), (58, 4477), (65, 4519), (74, 4552), (83, 4621), (84, 4639), (91, 4756), (92, 4780), (93, 4789), (107, 4918), (108, 4945), (112, 5005), (113, 5008),

Gene: CicholasNage_6 Start: 4321, Stop: 5376, Start Num: 2

Candidate Starts for CicholasNage_6:

(Start: 2 @4321 has 78 MA's), (17, 4459), (18, 4471), (27, 4576), (29, 4588), (36, 4627), (37, 4630), (42, 4666), (50, 4732), (55, 4747), (58, 4762), (65, 4804), (83, 4906), (91, 5041), (92, 5065), (107, 5206), (108, 5233), (109, 5242),

Gene: Claus_6 Start: 4323, Stop: 5378, Start Num: 2

Candidate Starts for Claus_6:

(Start: 2 @4323 has 78 MA's), (6, 4371), (14, 4458), (27, 4584), (29, 4596), (38, 4641), (42, 4674), (50, 4740), (58, 4770), (65, 4812), (69, 4821), (83, 4914), (84, 4932), (91, 5049), (92, 5073), (93, 5082), (100, 5160), (107, 5211), (108, 5238), (109, 5247),

Gene: Clautastrophe_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Clautastrophe_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: Cosmo_28 Start: 11185, Stop: 12219, Start Num: 4

Candidate Starts for Cosmo_28:

(Start: 4 @11185 has 5 MA's), (12, 11275), (17, 11290), (19, 11317), (35, 11455), (40, 11488), (57, 11566), (62, 11587), (63, 11590), (67, 11623), (68, 11629), (70, 11647), (71, 11650), (78, 11737), (86, 11842), (92, 11941), (93, 11950), (95, 11971), (99, 12016), (105, 12052), (108, 12103), (110, 12124), (111, 12145), (114, 12169), (115, 12181),

Gene: Crossroads_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Crossroads_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: DHan_6 Start: 4259, Stop: 5314, Start Num: 2

Candidate Starts for DHan_6:

(Start: 2 @4259 has 78 MA's), (6, 4307), (27, 4520), (29, 4532), (42, 4610), (50, 4676), (58, 4706), (65, 4748), (69, 4757), (83, 4850), (91, 4985), (92, 5009), (93, 5018), (100, 5096), (107, 5147), (108, 5174), (109, 5183),

Gene: DanBing_5 Start: 4143, Stop: 5198, Start Num: 2

Candidate Starts for DanBing_5:

(Start: 2 @4143 has 78 MA's), (6, 4191), (27, 4404), (29, 4416), (38, 4461), (42, 4494), (50, 4560), (58, 4590), (65, 4632), (69, 4641), (83, 4734), (84, 4752), (91, 4869), (92, 4893), (93, 4902), (100, 4980), (107, 5031), (108, 5058), (109, 5067),

Gene: Diminimus_17 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for Diminimus_17:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: DirkDirk_6 Start: 4322, Stop: 5377, Start Num: 2

Candidate Starts for DirkDirk_6:

(Start: 2 @4322 has 78 MA's), (17, 4460), (18, 4472), (27, 4577), (29, 4589), (36, 4628), (37, 4631), (42, 4667), (50, 4733), (55, 4748), (58, 4763), (65, 4805), (83, 4907), (91, 5042), (92, 5066), (107, 5207), (108, 5234), (109, 5243),

Gene: Douge_6 Start: 3988, Stop: 5043, Start Num: 2

Candidate Starts for Douge_6:

(1, 3982), (Start: 2 @3988 has 78 MA's), (16, 4129), (17, 4132), (27, 4249), (29, 4261), (42, 4339), (48, 4387), (50, 4405), (58, 4435), (65, 4477), (69, 4486), (74, 4510), (83, 4579), (84, 4597), (91, 4714), (92, 4738), (93, 4747), (107, 4876), (108, 4903), (112, 4963), (113, 4966),

Gene: Douzhi_6 Start: 3988, Stop: 5043, Start Num: 2

Candidate Starts for Douzhi_6:

(1, 3982), (Start: 2 @3988 has 78 MA's), (12, 4117), (17, 4132), (27, 4249), (29, 4261), (42, 4339), (48, 4387), (50, 4405), (58, 4435), (65, 4477), (74, 4510), (83, 4579), (84, 4597), (91, 4714), (92, 4738), (93, 4747), (107, 4876), (108, 4903), (112, 4963), (113, 4966),

Gene: DrSeegs_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for DrSeegs_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Dulcita_17 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for Dulcita_17:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: DuncansLeg_7 Start: 4419, Stop: 5489, Start Num: 2

Candidate Starts for DuncansLeg_7:

(Start: 2 @4419 has 78 MA's), (7, 4467), (8, 4476), (10, 4503), (17, 4554), (24, 4632), (27, 4671), (29, 4683), (42, 4761), (45, 4785), (50, 4827), (58, 4857), (84, 5043), (91, 5160), (92, 5184), (108, 5352),

Gene: DyoEdafos_7 Start: 4176, Stop: 5231, Start Num: 2

Candidate Starts for DyoEdafos_7:

(1, 4170), (Start: 2 @4176 has 78 MA's), (12, 4305), (27, 4437), (29, 4449), (42, 4527), (48, 4575), (50, 4593), (58, 4623), (65, 4665), (74, 4698), (83, 4767), (84, 4785), (91, 4902), (92, 4926), (107, 5064), (108, 5091), (112, 5151),

Gene: Ellson_7 Start: 4428, Stop: 5498, Start Num: 2

Candidate Starts for Ellson_7:

(Start: 2 @4428 has 78 MA's), (7, 4476), (8, 4485), (10, 4512), (17, 4563), (24, 4641), (27, 4680), (29, 4692), (42, 4770), (45, 4794), (50, 4836), (58, 4866), (84, 5052), (91, 5169), (92, 5193), (108, 5361),

Gene: Enceladus_6 Start: 4322, Stop: 5377, Start Num: 2

Candidate Starts for Enceladus_6:

(Start: 2 @4322 has 78 MA's), (17, 4460), (18, 4472), (27, 4577), (29, 4589), (36, 4628), (37, 4631), (42, 4667), (50, 4733), (55, 4748), (58, 4763), (65, 4805), (83, 4907), (91, 5042), (92, 5066), (107, 5207), (108, 5234), (109, 5243),

Gene: EniyanLRS_25 Start: 10876, Stop: 11910, Start Num: 4

Candidate Starts for EniyanLRS_25:

(Start: 4 @10876 has 5 MA's), (12, 10966), (17, 10981), (19, 11008), (35, 11146), (40, 11179), (57, 11257), (62, 11278), (63, 11281), (67, 11314), (68, 11320), (70, 11338), (71, 11341), (78, 11428), (86, 11533), (92, 11632), (93, 11641), (95, 11662), (99, 11707), (105, 11743), (108, 11794), (110, 11815), (111, 11836), (114, 11860), (115, 11872),

Gene: Estes_21 Start: 8605, Stop: 9780, Start Num: 3

Candidate Starts for Estes_21:

(Start: 3 @8605 has 22 MA's), (9, 8668), (11, 8707), (18, 8740), (21, 8773), (26, 8839), (31, 8875), (33, 8887), (35, 8893), (39, 8908), (51, 9016), (52, 9025), (67, 9124), (71, 9148), (73, 9196), (79, 9247), (83, 9301), (90, 9442), (93, 9484),

Gene: Faith1_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Faith1_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: FarmResident_6 Start: 4027, Stop: 5082, Start Num: 2

Candidate Starts for FarmResident_6:

(1, 4021), (Start: 2 @4027 has 78 MA's), (16, 4168), (17, 4171), (27, 4288), (29, 4300), (42, 4378), (48, 4426), (50, 4444), (58, 4474), (65, 4516), (69, 4525), (74, 4549), (83, 4618), (84, 4636), (91, 4753), (92, 4777), (93, 4786), (107, 4915), (108, 4942), (112, 5002), (113, 5005),

Gene: Finemlucis_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Finemlucis_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Finnry_7 Start: 4413, Stop: 5483, Start Num: 2

Candidate Starts for Finnry_7:

(Start: 2 @4413 has 78 MA's), (7, 4461), (8, 4470), (10, 4497), (17, 4548), (24, 4626), (27, 4665), (29, 4677), (42, 4755), (45, 4779), (50, 4821), (58, 4851), (83, 5019), (84, 5037), (91, 5154), (92, 5178), (100, 5265), (108, 5346),

Gene: FreakyGoo_17 Start: 7882, Stop: 9042, Start Num: 3

Candidate Starts for FreakyGoo_17:

(Start: 3 @7882 has 22 MA's), (12, 7990), (22, 8056), (23, 8077), (28, 8131), (35, 8170), (39, 8185), (43, 8227), (46, 8248), (50, 8284), (51, 8293), (64, 8383), (66, 8392), (67, 8395), (71, 8419), (73, 8467), (80, 8521), (81, 8536), (84, 8590), (89, 8692), (93, 8755),

Gene: Gabriela_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Gabriela_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Gardann_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Gardann_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: GardenSalsa_20 Start: 8439, Stop: 9614, Start Num: 3

Candidate Starts for GardenSalsa_20:

(Start: 3 @8439 has 22 MA's), (9, 8502), (11, 8541), (18, 8574), (21, 8607), (26, 8673), (31, 8709), (33, 8721), (35, 8727), (39, 8742), (51, 8850), (52, 8859), (67, 8958), (71, 8982), (73, 9030), (77, 9063), (79, 9081), (83, 9135), (90, 9276), (93, 9318),

Gene: GenevaB15_20 Start: 8460, Stop: 9641, Start Num: 3

Candidate Starts for GenevaB15_20:

(Start: 3 @8460 has 22 MA's), (9, 8523), (11, 8562), (18, 8595), (21, 8628), (26, 8694), (31, 8730), (33, 8742), (35, 8748), (39, 8763), (51, 8871), (60, 8934), (67, 8979), (71, 9009), (73, 9057), (77, 9090), (79, 9108), (83, 9162), (90, 9303), (91, 9312), (93, 9345),

Gene: Glaske16_17 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for Glaske16_17:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: GuuelaD_6 Start: 4356, Stop: 5411, Start Num: 2

Candidate Starts for GuuelaD_6:

(Start: 2 @4356 has 78 MA's), (6, 4404), (14, 4491), (27, 4617), (29, 4629), (42, 4707), (50, 4773), (58, 4803), (65, 4845), (69, 4854), (83, 4947), (84, 4965), (91, 5082), (92, 5106), (93, 5115), (98, 5166), (101, 5196), (102, 5211), (108, 5271),

Gene: Hafay_6 Start: 4350, Stop: 5402, Start Num: 2

Candidate Starts for Hafay_6:

(Start: 2 @4350 has 78 MA's), (6, 4392), (27, 4605), (29, 4617), (38, 4662), (42, 4695), (50, 4761), (58, 4791), (65, 4833), (69, 4842), (83, 4935), (84, 4953), (91, 5070), (92, 5094), (93, 5103), (107, 5235), (108, 5262),

Gene: Halena_6 Start: 4321, Stop: 5376, Start Num: 2

Candidate Starts for Halena_6:

(Start: 2 @4321 has 78 MA's), (17, 4459), (18, 4471), (27, 4576), (29, 4588), (36, 4627), (37, 4630), (42, 4666), (50, 4732), (55, 4747), (58, 4762), (65, 4804), (83, 4906), (91, 5041), (92, 5065), (107, 5206), (108, 5233), (109, 5242),

Gene: IPHane7_16 Start: 7882, Stop: 9042, Start Num: 3

Candidate Starts for IPHane7_16:

(Start: 3 @7882 has 22 MA's), (12, 7990), (22, 8056), (23, 8077), (28, 8131), (35, 8170), (39, 8185), (43, 8227), (46, 8248), (50, 8284), (51, 8293), (64, 8383), (66, 8392), (67, 8395), (71, 8419), (73, 8467), (80, 8521), (81, 8536), (84, 8590), (89, 8692), (93, 8755),

Gene: Itos_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Itos_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Izel_17 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for Izel_17:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: Jobypre_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Jobypre_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: JoeDirt_6 Start: 4321, Stop: 5376, Start Num: 2

Candidate Starts for JoeDirt_6:

(Start: 2 @4321 has 78 MA's), (17, 4459), (18, 4471), (27, 4576), (29, 4588), (36, 4627), (37, 4630), (42, 4666), (50, 4732), (55, 4747), (58, 4762), (65, 4804), (83, 4906), (91, 5041), (92, 5065), (107, 5206), (108, 5233), (109, 5242),

Gene: Jubie_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Jubie_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: Kahlid_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Kahlid_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Kingsolomon_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Kingsolomon_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: KirDoubleO7_5 Start: 4428, Stop: 5498, Start Num: 2

Candidate Starts for KirDoubleO7_5:

(Start: 2 @4428 has 78 MA's), (7, 4476), (8, 4485), (10, 4512), (17, 4563), (24, 4641), (27, 4680), (29, 4692), (42, 4770), (45, 4794), (50, 4836), (58, 4866), (84, 5052), (91, 5169), (92, 5193), (108, 5361),

Gene: KleverKiS_16 Start: 7878, Stop: 9038, Start Num: 3

Candidate Starts for KleverKiS_16:

(Start: 3 @7878 has 22 MA's), (12, 7986), (22, 8052), (23, 8073), (28, 8127), (35, 8166), (39, 8181), (43, 8223), (46, 8244), (50, 8280), (51, 8289), (64, 8379), (66, 8388), (67, 8391), (71, 8415), (73, 8463), (80, 8517), (81, 8532), (84, 8586), (89, 8688), (93, 8751),

Gene: Kropertea_6 Start: 3983, Stop: 5038, Start Num: 2

Candidate Starts for Kropertea_6:

(1, 3977), (Start: 2 @3983 has 78 MA's), (12, 4112), (27, 4244), (29, 4256), (42, 4334), (48, 4382), (50, 4400), (58, 4430), (65, 4472), (74, 4505), (83, 4574), (84, 4592), (91, 4709), (92, 4733), (93, 4742), (107, 4871), (108, 4898), (112, 4958),

Gene: Krypton555_7 Start: 4408, Stop: 5478, Start Num: 2

Candidate Starts for Krypton555_7:

(Start: 2 @4408 has 78 MA's), (7, 4456), (8, 4465), (10, 4492), (17, 4543), (22, 4594), (24, 4621), (27, 4660), (29, 4672), (42, 4750), (45, 4774), (50, 4816), (58, 4846), (84, 5032), (91, 5149), (92, 5173), (108, 5341),

Gene: Kumao_15 Start: 7305, Stop: 8408, Start Num: 5

Candidate Starts for Kumao_15:

(Start: 5 @7305 has 1 MA's), (12, 7392), (25, 7509), (26, 7518), (38, 7584), (54, 7728), (56, 7734), (59, 7761), (67, 7809), (70, 7830), (71, 7833), (72, 7869), (75, 7899), (76, 7911), (81, 7950), (84, 8004), (93, 8133), (95, 8154), (97, 8169), (103, 8238), (106, 8259), (110, 8313), (116, 8373),

Gene: LeBron_6 Start: 4321, Stop: 5376, Start Num: 2

Candidate Starts for LeBron_6:

(Start: 2 @4321 has 78 MA's), (17, 4459), (18, 4471), (27, 4576), (29, 4588), (36, 4627), (37, 4630), (42, 4666), (50, 4732), (55, 4747), (58, 4762), (65, 4804), (83, 4906), (91, 5041), (92, 5065), (107, 5206), (108, 5233), (109, 5242),

Gene: Lewan_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Lewan_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: LilDestine_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for LilDestine_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: LilhomieP_15 Start: 7882, Stop: 9042, Start Num: 3

Candidate Starts for LilhomieP_15:

(Start: 3 @7882 has 22 MA's), (12, 7990), (22, 8056), (23, 8077), (28, 8131), (35, 8170), (39, 8185), (43, 8227), (46, 8248), (50, 8284), (51, 8293), (64, 8383), (66, 8392), (67, 8395), (71, 8419), (73, 8467), (80, 8521), (81, 8536), (84, 8590), (89, 8692), (93, 8755),

Gene: LiyuLake_7 Start: 4419, Stop: 5489, Start Num: 2

Candidate Starts for LiyuLake_7:

(Start: 2 @4419 has 78 MA's), (7, 4467), (8, 4476), (10, 4503), (17, 4554), (24, 4632), (27, 4671), (29, 4683), (42, 4761), (45, 4785), (50, 4827), (58, 4857), (84, 5043), (91, 5160), (92, 5184), (108, 5352),

Gene: Loadrie_6 Start: 4350, Stop: 5402, Start Num: 2

Candidate Starts for Loadrie_6:

(Start: 2 @4350 has 78 MA's), (6, 4392), (27, 4605), (29, 4617), (38, 4662), (42, 4695), (50, 4761), (58, 4791), (65, 4833), (69, 4842), (83, 4935), (84, 4953), (91, 5070), (92, 5094), (93, 5103), (107, 5235), (108, 5262),

Gene: Lolly9_7 Start: 4422, Stop: 5492, Start Num: 2

Candidate Starts for Lolly9_7:

(Start: 2 @4422 has 78 MA's), (7, 4470), (8, 4479), (10, 4506), (17, 4557), (24, 4635), (27, 4674), (29, 4686), (42, 4764), (45, 4788), (50, 4830), (58, 4860), (84, 5046), (91, 5163), (92, 5187), (100, 5274), (108, 5355),

Gene: Lumos_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Lumos_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: Lynnae_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Lynnae_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: MAckerman_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for MAckerman_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: MaryV_28 Start: 11148, Stop: 12182, Start Num: 4

Candidate Starts for MaryV_28:

(Start: 4 @11148 has 5 MA's), (12, 11238), (17, 11253), (19, 11280), (35, 11418), (40, 11451), (57, 11529), (62, 11550), (63, 11553), (67, 11586), (68, 11592), (70, 11610), (71, 11613), (78, 11700), (86, 11805), (92, 11904), (93, 11913), (95, 11934), (99, 11979), (105, 12015), (108, 12066), (110, 12087), (111, 12108), (114, 12132), (115, 12144),

Gene: Miley16_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Miley16_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: MiniLon_7 Start: 4422, Stop: 5492, Start Num: 2

Candidate Starts for MiniLon_7:

(Start: 2 @4422 has 78 MA's), (7, 4470), (8, 4479), (10, 4506), (17, 4557), (24, 4635), (27, 4674), (29, 4686), (42, 4764), (45, 4788), (50, 4830), (58, 4860), (84, 5046), (91, 5163), (92, 5187), (100, 5274), (108, 5355),

Gene: MiniMac_7 Start: 4422, Stop: 5492, Start Num: 2

Candidate Starts for MiniMac_7:

(Start: 2 @4422 has 78 MA's), (7, 4470), (8, 4479), (10, 4506), (17, 4557), (24, 4635), (27, 4674), (29, 4686), (42, 4764), (45, 4788), (50, 4830), (58, 4860), (84, 5046), (91, 5163), (92, 5187), (100, 5274), (108, 5355),

Gene: MkaliMitinis3_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for MkaliMitinis3_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Moostard_7 Start: 4412, Stop: 5482, Start Num: 2

Candidate Starts for Moostard_7:

(Start: 2 @4412 has 78 MA's), (7, 4460), (8, 4469), (10, 4496), (17, 4547), (24, 4625), (27, 4664), (29, 4676), (42, 4754), (45, 4778), (50, 4820), (58, 4850), (83, 5018), (84, 5036), (91, 5153), (92, 5177), (100, 5264), (108, 5345),

Gene: MrMagoo_20 Start: 8439, Stop: 9614, Start Num: 3

Candidate Starts for MrMagoo_20:

(Start: 3 @8439 has 22 MA's), (9, 8502), (11, 8541), (18, 8574), (21, 8607), (26, 8673), (31, 8709), (33, 8721), (35, 8727), (39, 8742), (51, 8850), (52, 8859), (67, 8958), (71, 8982), (73, 9030), (77, 9063), (79, 9081), (83, 9135), (90, 9276), (93, 9318),

Gene: MsGreen_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for MsGreen_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: Nanosmite_20 Start: 8660, Stop: 9835, Start Num: 3

Candidate Starts for Nanosmite_20:

(Start: 3 @8660 has 22 MA's), (13, 8771), (18, 8795), (20, 8825), (23, 8855), (25, 8885), (28, 8909), (32, 8936), (35, 8948), (40, 8981), (44, 9011), (47, 9035), (49, 9056), (53, 9089), (59, 9131), (67, 9179), (71, 9203), (72, 9239), (73, 9251), (75, 9269), (76, 9281), (79, 9302), (80, 9305), (84, 9374), (93, 9539),

Gene: Netyap_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Netyap_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Nicholas_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Nicholas_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: Nicholasp3_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Nicholasp3_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: OhShagHennessy_6 Start: 4294, Stop: 5349, Start Num: 2

Candidate Starts for OhShagHennessy_6:

(Start: 2 @4294 has 78 MA's), (17, 4432), (18, 4444), (27, 4549), (29, 4561), (36, 4600), (37, 4603), (42, 4639), (50, 4705), (55, 4720), (58, 4735), (65, 4777), (83, 4879), (91, 5014), (92, 5038), (107, 5179), (108, 5206), (109, 5215),

Gene: OverPar_6 Start: 4350, Stop: 5402, Start Num: 2

Candidate Starts for OverPar_6:

(Start: 2 @4350 has 78 MA's), (6, 4392), (27, 4605), (29, 4617), (38, 4662), (42, 4695), (50, 4761), (58, 4791), (65, 4833), (69, 4842), (83, 4935), (84, 4953), (91, 5070), (92, 5094), (93, 5103), (107, 5235), (108, 5262),

Gene: PYPDinur_6 Start: 3988, Stop: 5043, Start Num: 2

Candidate Starts for PYPDinur_6:

(1, 3982), (Start: 2 @3988 has 78 MA's), (12, 4117), (17, 4132), (27, 4249), (29, 4261), (42, 4339), (48, 4387), (50, 4405), (58, 4435), (65, 4477), (74, 4510), (83, 4579), (84, 4597), (91, 4714), (92, 4738), (93, 4747), (107, 4876), (108, 4903), (112, 4963), (113, 4966),

Gene: PegLeg_16 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for PegLeg_16:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: Poochiewood_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Poochiewood_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: Quby_6 Start: 3988, Stop: 5043, Start Num: 2

Candidate Starts for Quby_6:

(1, 3982), (Start: 2 @3988 has 78 MA's), (16, 4129), (17, 4132), (27, 4249), (29, 4261), (42, 4339), (48, 4387), (50, 4405), (58, 4435), (65, 4477), (69, 4486), (74, 4510), (83, 4579), (84, 4597), (91, 4714), (92, 4738), (93, 4747), (107, 4876), (108, 4903), (112, 4963), (113, 4966),

Gene: Red305_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Red305_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: Reindeer_14 Start: 7753, Stop: 8904, Start Num: 3

Candidate Starts for Reindeer_14:

(Start: 3 @7753 has 22 MA's), (22, 7927), (23, 7948), (26, 7987), (28, 8002), (35, 8041), (36, 8047), (39, 8056), (43, 8098), (46, 8119), (50, 8155), (61, 8215), (62, 8221), (67, 8257), (71, 8281), (73, 8329), (76, 8359), (77, 8362), (82, 8431), (84, 8452), (89, 8554), (91, 8584), (93, 8617),

Gene: Rey_20 Start: 8671, Stop: 9846, Start Num: 3

Candidate Starts for Rey_20:

(Start: 3 @8671 has 22 MA's), (9, 8734), (11, 8773), (21, 8839), (26, 8905), (33, 8953), (35, 8959), (39, 8974), (51, 9082), (52, 9091), (59, 9142), (63, 9157), (67, 9190), (71, 9214), (73, 9262), (77, 9295), (79, 9313), (90, 9508), (93, 9550),

Gene: Rose5_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Rose5_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: RoseMarie_16 Start: 8126, Stop: 9286, Start Num: 3

Candidate Starts for RoseMarie_16:

(Start: 3 @8126 has 22 MA's), (22, 8300), (23, 8321), (28, 8375), (35, 8414), (36, 8420), (39, 8429), (43, 8471), (46, 8492), (50, 8528), (51, 8537), (53, 8552), (61, 8597), (67, 8639), (71, 8663), (73, 8711), (76, 8741), (82, 8813), (84, 8834), (90, 8957), (93, 8999), (96, 9035),

Gene: Rossetti_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Rossetti_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (17, 4455), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Rumpelstiltskin_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Rumpelstiltskin_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Samty_7 Start: 4412, Stop: 5482, Start Num: 2

Candidate Starts for Samty_7:

(Start: 2 @4412 has 78 MA's), (7, 4460), (8, 4469), (10, 4496), (17, 4547), (24, 4625), (27, 4664), (29, 4676), (42, 4754), (45, 4778), (50, 4820), (58, 4850), (83, 5018), (84, 5036), (91, 5153), (92, 5177), (100, 5264), (108, 5345),

Gene: Sarshaun_6 Start: 4350, Stop: 5402, Start Num: 2

Candidate Starts for Sarshaun_6:

(Start: 2 @4350 has 78 MA's), (6, 4392), (27, 4605), (29, 4617), (38, 4662), (42, 4695), (50, 4761), (58, 4791), (65, 4833), (69, 4842), (83, 4935), (84, 4953), (91, 5070), (92, 5094), (93, 5103), (107, 5235), (108, 5262),

Gene: Sheng711_6 Start: 3988, Stop: 5043, Start Num: 2

Candidate Starts for Sheng711_6:

(1, 3982), (Start: 2 @3988 has 78 MA's), (12, 4117), (17, 4132), (27, 4249), (29, 4261), (42, 4339), (48, 4387), (50, 4405), (58, 4435), (65, 4477), (74, 4510), (83, 4579), (84, 4597), (91, 4714), (92, 4738), (93, 4747), (107, 4876), (108, 4903), (112, 4963), (113, 4966),

Gene: Silverleaf_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Silverleaf_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: Skinny_17 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for Skinny_17:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: SlimJimmy_15 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for SlimJimmy_15:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: Snenia_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for Snenia_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: SoJulia_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for SoJulia_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Soap141_6 Start: 4350, Stop: 5402, Start Num: 2

Candidate Starts for Soap141_6:

(Start: 2 @4350 has 78 MA's), (6, 4392), (27, 4605), (29, 4617), (38, 4662), (42, 4695), (50, 4761), (58, 4791), (65, 4833), (69, 4842), (83, 4935), (84, 4953), (91, 5070), (92, 5094), (93, 5103), (107, 5235), (108, 5262),

Gene: Tourach_6 Start: 4327, Stop: 5382, Start Num: 2

Candidate Starts for Tourach_6:

(Start: 2 @4327 has 78 MA's), (6, 4375), (14, 4462), (24, 4549), (27, 4588), (29, 4600), (42, 4678), (50, 4744), (58, 4774), (65, 4816), (69, 4825), (83, 4918), (91, 5053), (92, 5077), (98, 5137), (101, 5167), (102, 5182), (108, 5242),

Gene: TpudiCK_17 Start: 7881, Stop: 9041, Start Num: 3

Candidate Starts for TpudiCK_17:

(Start: 3 @7881 has 22 MA's), (12, 7989), (22, 8055), (23, 8076), (28, 8130), (35, 8169), (39, 8184), (43, 8226), (46, 8247), (50, 8283), (51, 8292), (64, 8382), (66, 8391), (67, 8394), (71, 8418), (73, 8466), (80, 8520), (81, 8535), (84, 8589), (89, 8691), (93, 8754),

Gene: TriFive_7 Start: 4416, Stop: 5486, Start Num: 2

Candidate Starts for TriFive_7:

(Start: 2 @4416 has 78 MA's), (7, 4464), (8, 4473), (10, 4500), (17, 4551), (24, 4629), (27, 4668), (29, 4680), (42, 4758), (45, 4782), (50, 4824), (58, 4854), (83, 5022), (84, 5040), (91, 5157), (92, 5181), (100, 5268), (108, 5349),

Gene: TyDawg_16 Start: 7882, Stop: 9042, Start Num: 3

Candidate Starts for TyDawg_16:

(Start: 3 @7882 has 22 MA's), (12, 7990), (22, 8056), (23, 8077), (28, 8131), (35, 8170), (39, 8185), (43, 8227), (46, 8248), (50, 8284), (51, 8293), (64, 8383), (66, 8392), (67, 8395), (71, 8419), (73, 8467), (80, 8521), (81, 8536), (84, 8590), (89, 8692), (93, 8755),

Gene: Tyson_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Tyson_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: UPIE_6 Start: 4318, Stop: 5373, Start Num: 2

Candidate Starts for UPIE_6:

(Start: 2 @4318 has 78 MA's), (17, 4456), (18, 4468), (27, 4573), (29, 4585), (36, 4624), (37, 4627), (42, 4663), (50, 4729), (55, 4744), (58, 4759), (65, 4801), (83, 4903), (91, 5038), (92, 5062), (107, 5203), (108, 5230), (109, 5239),

Gene: Underpass_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Underpass_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202),

(108, 5229),

Gene: Vetrix_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Vetrix_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Wamburgxpress_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Wamburgxpress_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: Whirlwind_8 Start: 4408, Stop: 5478, Start Num: 2

Candidate Starts for Whirlwind_8:

(Start: 2 @4408 has 78 MA's), (7, 4456), (8, 4465), (10, 4492), (17, 4543), (22, 4594), (24, 4621), (27, 4660), (29, 4672), (42, 4750), (45, 4774), (50, 4816), (58, 4846), (84, 5032), (91, 5149), (92, 5173), (107, 5314), (108, 5341),

Gene: Wigglewobble_6 Start: 4350, Stop: 5402, Start Num: 2

Candidate Starts for Wigglewobble_6:

(Start: 2 @4350 has 78 MA's), (6, 4392), (27, 4605), (29, 4617), (38, 4662), (42, 4695), (50, 4761), (58, 4791), (65, 4833), (69, 4842), (83, 4935), (84, 4953), (91, 5070), (92, 5094), (93, 5103), (107, 5235), (108, 5262),

Gene: Wildcat_28 Start: 11158, Stop: 12192, Start Num: 4

Candidate Starts for Wildcat_28:

(Start: 4 @11158 has 5 MA's), (12, 11248), (17, 11263), (19, 11290), (35, 11428), (40, 11461), (57, 11539), (62, 11560), (63, 11563), (67, 11596), (68, 11602), (70, 11620), (71, 11623), (78, 11710), (86, 11815), (92, 11914), (93, 11923), (95, 11944), (99, 11989), (105, 12025), (108, 12076), (110, 12097), (111, 12118), (114, 12142), (115, 12154),

Gene: Wilder_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Wilder_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Winky_6 Start: 4311, Stop: 5369, Start Num: 2

Candidate Starts for Winky_6:

(Start: 2 @4311 has 78 MA's), (6, 4359), (27, 4572), (29, 4584), (38, 4629), (42, 4662), (50, 4728), (58, 4758), (65, 4800), (69, 4809), (83, 4902), (84, 4920), (91, 5037), (92, 5061), (93, 5070), (107, 5202), (108, 5229),

Gene: Wyatt2_6 Start: 4320, Stop: 5375, Start Num: 2

Candidate Starts for Wyatt2_6:

(Start: 2 @4320 has 78 MA's), (17, 4458), (18, 4470), (27, 4575), (29, 4587), (36, 4626), (37, 4629), (42, 4665), (50, 4731), (55, 4746), (58, 4761), (65, 4803), (83, 4905), (91, 5040), (92, 5064), (107, 5205), (108, 5232), (109, 5241),

Gene: Zakai_6 Start: 4299, Stop: 5357, Start Num: 2

Candidate Starts for Zakai_6:

(Start: 2 @4299 has 78 MA's), (6, 4347), (27, 4560), (29, 4572), (38, 4617), (42, 4650), (50, 4716), (58, 4746), (65, 4788), (69, 4797), (83, 4890), (84, 4908), (91, 5025), (92, 5049), (93, 5058), (107, 5190), (108, 5217),

Gene: Zaria_6 Start: 4321, Stop: 5376, Start Num: 2

Candidate Starts for Zaria_6:

(Start: 2 @4321 has 78 MA's), (17, 4459), (18, 4471), (27, 4576), (29, 4588), (36, 4627), (37, 4630), (42, 4666), (50, 4732), (55, 4747), (58, 4762), (65, 4804), (83, 4906), (91, 5041), (92, 5065), (107, 5206), (108, 5233), (109, 5242),

Gene: ZhongYanYuan_5 Start: 4143, Stop: 5198, Start Num: 2

Candidate Starts for ZhongYanYuan_5:

(Start: 2 @4143 has 78 MA's), (6, 4191), (14, 4278), (27, 4404), (29, 4416), (38, 4461), (42, 4494), (50, 4560), (58, 4590), (65, 4632), (69, 4641), (83, 4734), (84, 4752), (91, 4869), (92, 4893), (93, 4902), (100, 4980), (107, 5031), (108, 5058), (109, 5067),