

Pham 291157

1: WST1_4 + 1	19	43	53	55	63	71	79	86	99	106	125	128	133	136	143	158	164	173	182	189	196	200			
2: Lemuria_4	3	13	20	38	45	48	58	66	76	116	120	136	143	159	164	176	182	189	196	200					
3: Jolie2_4	3	8	13	14	20	38	45	48	58	66	76	116	123	136	143	145	159	164	176	182	189	196	200		
4: Mercurio_5	1	12	19	29	32	55	63	75	92	97	109	118	125	134	143	153	157	163	171	182	189	196	200		
5: Chris_9	7	19	29	32	55	63	75	92	97	101	109	118	125	134	143	153	157	163	172	182	189	196	200		
6: Oscar_9	7	19	29	32	55	61	72	78	92	97	109	118	125	134	143	151	156	165	171	182	189	196	200		
7: Dartin_10 + 5	7	19	29	32	55	63	75	92	97	101	109	118	125	134	143	153	157	163	172	182	189	196	200		
8: LeMond_9	9	19	29	31	50	61	72	78	92	97	109	118	125	134	143	151	165	171	182	189	196	200			
9: Guanica15_10 + 7	9	19	29	31	50	61	72	78	92	97	109	118	125	134	143	151	165	171	182	189	196	200			
10: Curiosium_11	9	19	29	31	50	61	72	78	92	97	109	118	125	134	143	151	165	171	182	189	196	200			
11: LastHope_10	12	19	29	31	50	61	72	78	92	97	109	118	125	134	143	151	165	171	182	189	196	200			
12: Chavito_10	6	19	29	31	50	61	72	78	92	97	109	118	125	134	143	151	165	171	182	189	196	200			
13: TingHuaYa_10	7	19	29	32	55	63	75	92	97	101	109	118	125	134	143	153	157	163	172	182	189	196	200		
14: KiSi_9	1	12	19	29	32	55	63	75	92	97	101	109	118	125	134	143	153	157	163	171	182	189	196	200	
15: Nibb_9	1	12	19	29	32	55	63	75	92	97	101	109	118	125	134	143	153	157	163	171	182	189	196	200	
16: MarkPhew_9	1	12	19	29	32	55	63	75	92	97	101	109	118	125	134	143	153	157	163	172	182	189	196	200	
17: Scarlett_9	9	19	29	32	55	63	75	92	97	109	118	125	134	143	151	156	165	171	182	189	196	200			
18: Validus_10	9	19	29	32	50	56	64	72	78	85	95	100	100	138	138	151	156	165	175	182	189	196	200		
19: BoostSeason_6 + 2	9	19	29	32	50	56	64	72	78	85	95	100	100	138	138	151	156	165	175	182	189	196	200		
20: Strobilo_6 + 5	9	19	29	32	50	56	64	72	78	85	95	100	100	138	138	151	156	165	175	182	189	196	200		
21: TM4_6	9	19	29	32	47	50	56	64	72	78	85	95	100	110	138	138	151	156	165	175	182	189	196	200	
22: ZoeJ_6	3	12	19	29	31	50	63	75	80	80	93	102	117	124	137	143	151	165	171	182	189	196	200		
23: Rando14_8	3	12	19	29	31	50	53	63	75	83	87	93	102	117	124	137	143	151	165	171	182	189	196	200	
24: Omnicron_8	2	19	29	32	50	61	72	78	93	97	109	118	125	134	143	151	156	165	171	182	189	196	200		
25: Phrank_3 + 3	2	19	29	32	50	61	72	78	93	97	109	118	125	134	143	151	156	165	171	182	189	196	200		
26: Shadow_8	2	19	29	32	50	61	72	78	93	97	109	118	125	134	143	151	156	165	171	182	189	196	200		
27: Tigress_9 + 1	2	19	29	32	50	61	72	78	93	97	109	118	125	134	143	151	156	165	171	182	189	196	200		
28: Ximenita_10	12	19	29	32	50	56	64	72	78	85	95	109	118	138	143	146	151	155	167	172	182	189	196	200	
29: SirPhilip_9	12	19	29	32	36	44	50	61	72	78	92	97	109	118	132	137	143	146	156	165	171	182	189	196	200
30: Marshawn_11	11	19	29	32	36	44	50	61	72	78	92	97	109	118	132	137	143	146	156	165	171	182	189	196	200
31: Syra333_9	11	19	29	32	36	44	50	61	72	78	92	97	109	118	132	137	143	146	156	165	171	182	189	196	200
32: Tierra_9	16	19	29	32	36	44	50	61	72	78	92	97	109	118	123	143	151	165	177	182	189	196	200		
33: TClif_9	2	9	19	29	32	50	61	72	78	92	97	101	109	118	127	143	153	165	171	182	189	196	200		
34: Yuna_10	15	19	29	32	50	61	72	78	92	97	109	118	125	134	143	153	157	163	171	182	189	196	200		
35: Unicorn_9 + 1	11	19	29	32	50	61	72	78	92	97	109	118	125	134	143	151	156	165	171	182	189	196	200		
36: Ibrahim_3 + 5	16	19	29	32	50	60	70	78	88	95	112	114	122	144	149	165	172	182	189	196	200				
37: Mendokiset_4 + 1	10	17	29	32	36	46	52	54	61	73	82	98	107	138	142	151	162	182	189	196	200				
38: DS6A_7	10	17	29	32	36	46	52	54	61	73	82	98	107	138	142	151	162	182	189	196	200				

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 291157 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291157 has 64 members, 9 are drafts.

Phages represented in each track:

- Track 1 : WST1_4, IdentityCrisis_4
- Track 2 : Lemuria_4
- Track 3 : Jolie2_4
- Track 4 : Mercurio_5
- Track 5 : Chris_9
- Track 6 : Oscar_9
- Track 7 : Dartin_10, Niklas_10, Peanam_10, Shaobing_10, Richo_10, McMater_10
- Track 8 : LeMond_9
- Track 9 : Guanica15_10, Yunkel11_10, Efra2_10
- Track 10 : Curiosium_11
- Track 11 : LastHope_10
- Track 12 : Chavito_10
- Track 13 : TingHuaYa_10
- Track 14 : KiSi_9
- Track 15 : Nibb_9
- Track 16 : MarkPhew_9
- Track 17 : Scarlett_9
- Track 18 : Validus_10
- Track 19 : BoostSeason_6, Doughnut_6, Mufasa_6
- Track 20 : Strobilo_6, Milly_6, DismalFunk_6, Marcoliusprime_6, DismalStressor_6, Findley_6
- Track 21 : TM4_6
- Track 22 : ZoeJ_6
- Track 23 : Rando14_8
- Track 24 : Omnicron_8
- Track 25 : Phrank_9, Sunflower1121_8, Bryler_9, Cain_9
- Track 26 : Shadow1_8
- Track 27 : Tigress9_9, Krueger_9
- Track 28 : Ximenita_10
- Track 29 : SirPhilip_9
- Track 30 : Marshawn_11
- Track 31 : Syra333_9
- Track 32 : Tierra_9
- Track 33 : TClif_9
- Track 34 : Yuna_10
- Track 35 : Unicorn_9, PhelpsODU_9

- Track 36 : Ibrahim_5, RonRayGun_5, Bernal13_5, Whitty_5, Nairb_5, ZenTime222_5
- Track 37 : Mendokysei_4, Nette_5
- Track 38 : DS6A_7

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

The start number called the most often in the published annotations is 19, it was called in 44 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BoostSeason_6, Bryler_9, Cain_9, Chavito_10, Chris_9, Curiosium_11, Dartin_10, DismalFunk_6, DismalStressor_6, Doughnut_6, Efra2_10, Findley_6, Guanica15_10, IdentityCrisis_4, KiSi_9, Krueger_9, LastHope_10, LeMond_9, Marcoliusprime_6, MarkPhew_9, Marshawn_11, McMater_10, Milly_6, Mufasa_6, Nibb_9, Niklas_10, Oscar_9, Peanam_10, PhelpsODU_9, Phrank_9, Rando14_8, Richo_10, Scarlett_9, Shadow1_8, Shaobing_10, SirPhilip_9, Strobilo_6, Sunflower1121_8, Syra333_9, TClif_9, TM4_6, Tierra_9, Tigress9_9, TingHuaYa_10, Unicorn_9, Validus_10, WST1_4, Ximenita_10, Yuna_10, Yunkel11_10, ZoeJ_6,

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

- Omnicron_8,

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

- Bernal13_5, DS6A_7, Ibrahim_5, Jolie2_4, Lemuria_4, Mendokysei_4, Mercurio_5, Nairb_5, Nette_5, RonRayGun_5, Whitty_5, ZenTime222_5,

Summary by start number:

Start 2:

- Found in 21 of 64 (32.8%) of genes in pham
- Manual Annotations of this start: 7 of 55
- Called 38.1% of time when present
- Phage (with cluster) where this start called: Bernal13_5 (T), Ibrahim_5 (T), Mendokysei_4 (T), Nairb_5 (T), Nette_5 (T), RonRayGun_5 (T), Whitty_5 (T), ZenTime222_5 (T),

Start 3:

- Found in 4 of 64 (6.2%) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Jolie2_4 (G4), Lemuria_4 (G4), Mercurio_5 (G4),

Start 10:

- Found in 1 of 64 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A_7 (singleton),

Start 19:

- Found in 52 of 64 (81.2%) of genes in pham
- Manual Annotations of this start: 44 of 55
- Called 98.1% of time when present
- Phage (with cluster) where this start called: BoostSeason_6 (K2), Bryler_9 (K6), Cain_9 (K6), Chavito_10 (K1), Chris_9 (K1), Curiosium_11 (K1), Dartin_10 (K1), DismalFunk_6 (K2), DismalStressor_6 (K2), Doughnut_6 (K2), Efra2_10 (K1), Findley_6 (K2), Guanica15_10 (K1), IdentityCrisis_4 (AJ), KiSi_9 (K1), Krueger_9 (K6), LastHope_10 (K1), LeMond_9 (K1), Marcoliusprime_6 (K2), MarkPhew_9 (K1), Marshawn_11 (K6), McMater_10 (K1), Milly_6 (K2), Mufasa_6 (K2), Nibb_9 (K1), Niklas_10 (K1), Oscar_9 (K1), Peanam_10 (K1), PhelpsODU_9 (K6), Phrank_9 (K6), Rando14_8 (K5), Richo_10 (K1), Scarlett_9 (K1), Shadow1_8 (K6), Shaobing_10 (K1), SirPhilip_9 (K6), Strobilo_6 (K2), Sunflower1121_8 (K6), Syra333_9 (K6), TClif_9 (K6), TM4_6 (K2), Tierra_9 (K6), Tigress9_9 (K6), TingHuaYa_10 (K1), Unicorn_9 (K6), Validus_10 (K1), WST1_4 (AJ), Ximenita_10 (K6), Yuna_10 (K6), Yunkel11_10 (K1), ZoeJ_6 (K2),

Start 22:

- Found in 2 of 64 (3.1%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Omnicron_8 (K5),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, G4, AJ, K2, K1, T, K5, K6,

Info for manual annotations of cluster AJ:

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

Info for manual annotations of cluster G4:

- Start number 3 was manually annotated 2 times for cluster G4.

Info for manual annotations of cluster K1:

- Start number 19 was manually annotated 16 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 19 was manually annotated 11 times for cluster K2.

Info for manual annotations of cluster K5:

- Start number 19 was manually annotated 1 time for cluster K5.
- Start number 22 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster K6:

- Start number 19 was manually annotated 15 times for cluster K6.

Info for manual annotations of cluster T:

- Start number 2 was manually annotated 7 times for cluster T.

Gene Information:

Gene: Bernal13_5 Start: 4170, Stop: 5918, Start Num: 2

Candidate Starts for Bernal13_5:

(Start: 2 @4170 has 7 MA's), (11, 4239), (50, 4575), (70, 4737), (74, 4773), (81, 4827), (93, 4944), (97, 4992), (112, 5127), (130, 5265), (147, 5469), (148, 5472), (149, 5475), (150, 5493), (165, 5598), (182, 5718), (183, 5721), (189, 5796), (196, 5862),

Gene: BoostSeason_6 Start: 3571, Stop: 5079, Start Num: 19

Candidate Starts for BoostSeason_6:

(Start: 19 @3571 has 44 MA's), (29, 3649), (50, 3871), (56, 3949), (64, 3985), (67, 4006), (71, 4033), (72, 4042), (75, 4081), (80, 4102), (85, 4147), (89, 4159), (95, 4198), (100, 4273), (135, 4498), (138, 4522), (151, 4663), (156, 4714), (165, 4756), (175, 4816), (182, 4876), (186, 4927), (189, 4954), (190, 4966), (197, 5023),

Gene: Bryler_9 Start: 4458, Stop: 5957, Start Num: 19

Candidate Starts for Bryler_9:

(Start: 2 @4317 has 7 MA's), (Start: 19 @4458 has 44 MA's), (29, 4536), (63, 4794), (67, 4818), (72, 4854), (75, 4893), (80, 4917), (93, 5022), (97, 5067), (105, 5136), (109, 5151), (111, 5175), (113, 5190), (118, 5232), (143, 5445), (151, 5541), (156, 5592), (161, 5607), (165, 5634), (177, 5706), (182, 5754), (189, 5832), (190, 5844), (192, 5874),

Gene: Cain_9 Start: 4458, Stop: 5945, Start Num: 19

Candidate Starts for Cain_9:

(Start: 2 @4317 has 7 MA's), (Start: 19 @4458 has 44 MA's), (29, 4536), (63, 4794), (67, 4818), (72, 4854), (75, 4893), (80, 4917), (93, 5022), (97, 5067), (105, 5136), (109, 5151), (111, 5175), (113, 5190), (118, 5232), (143, 5433), (151, 5529), (156, 5580), (161, 5595), (165, 5622), (177, 5694), (182, 5742), (189, 5820), (190, 5832), (192, 5862),

Gene: Chavito_10 Start: 4613, Stop: 6124, Start Num: 19

Candidate Starts for Chavito_10:

(Start: 2 @4466 has 7 MA's), (Start: 19 @4613 has 44 MA's), (29, 4691), (37, 4757), (50, 4880), (63, 4991), (67, 5015), (71, 5042), (75, 5090), (77, 5105), (78, 5108), (92, 5216), (93, 5222), (96, 5252), (97, 5264), (109, 5348), (118, 5429), (143, 5612), (151, 5708), (156, 5759), (165, 5801), (177, 5873), (182, 5921), (189, 5999), (190, 6011), (198, 6071), (200, 6101),

Gene: Chris_9 Start: 4465, Stop: 5928, Start Num: 19

Candidate Starts for Chris_9:

(7, 4372), (12, 4408), (Start: 19 @4465 has 44 MA's), (29, 4543), (32, 4579), (56, 4768), (63, 4801), (75, 4900), (92, 5026), (97, 5074), (105, 5143), (109, 5158), (118, 5239), (125, 5278), (143, 5416), (151, 5512), (153, 5524), (157, 5566), (165, 5605), (175, 5665), (177, 5677), (181, 5722), (182, 5725), (189, 5803), (190, 5815), (192, 5845), (195, 5860), (198, 5875), (200, 5905),

Gene: Curiosium_11 Start: 4917, Stop: 6440, Start Num: 19

Candidate Starts for Curiosium_11:

(Start: 19 @4917 has 44 MA's), (29, 4995), (50, 5184), (63, 5295), (67, 5319), (72, 5355), (75, 5394), (77, 5409), (80, 5418), (92, 5520), (93, 5526), (97, 5568), (109, 5652), (118, 5733), (121, 5751), (143, 5919), (151, 6015), (165, 6108), (175, 6168), (177, 6180), (182, 6228), (189, 6315), (190, 6327), (198, 6387), (200, 6417),

Gene: DS6A_7 Start: 5169, Stop: 6722, Start Num: 10

Candidate Starts for DS6A_7:

(Start: 10 @5169 has 1 MA's), (17, 5262), (23, 5310), (25, 5331), (31, 5391), (35, 5418), (39, 5442), (41, 5457), (42, 5460), (46, 5502), (52, 5523), (54, 5571), (61, 5628), (67, 5655), (73, 5697), (75, 5730), (82, 5751), (93, 5808), (94, 5814), (98, 5892), (107, 5934), (138, 6165), (142, 6198), (151, 6306), (160,

6366), (161, 6372), (162, 6381), (182, 6519), (189, 6597), (190, 6609), (197, 6666), (200, 6699),

Gene: Dartin_10 Start: 4612, Stop: 6129, Start Num: 19

Candidate Starts for Dartin_10:

(Start: 19 @4612 has 44 MA's), (29, 4690), (50, 4879), (53, 4897), (67, 5014), (71, 5041), (72, 5050), (75, 5089), (77, 5104), (80, 5113), (92, 5215), (93, 5221), (96, 5251), (97, 5263), (109, 5347), (118, 5428), (134, 5545), (143, 5617), (151, 5713), (156, 5764), (165, 5806), (177, 5878), (182, 5926), (189, 6004), (190, 6016), (198, 6076),

Gene: DismalFunk_6 Start: 3574, Stop: 5094, Start Num: 19

Candidate Starts for DismalFunk_6:

(Start: 19 @3574 has 44 MA's), (29, 3652), (50, 3874), (56, 3952), (64, 3988), (67, 4009), (71, 4036), (75, 4084), (80, 4105), (85, 4150), (89, 4162), (95, 4201), (100, 4276), (138, 4537), (151, 4678), (156, 4729), (165, 4771), (175, 4831), (182, 4891), (189, 4969), (190, 4981), (197, 5038),

Gene: DismalStressor_6 Start: 3574, Stop: 5094, Start Num: 19

Candidate Starts for DismalStressor_6:

(Start: 19 @3574 has 44 MA's), (29, 3652), (50, 3874), (56, 3952), (64, 3988), (67, 4009), (71, 4036), (75, 4084), (80, 4105), (85, 4150), (89, 4162), (95, 4201), (100, 4276), (138, 4537), (151, 4678), (156, 4729), (165, 4771), (175, 4831), (182, 4891), (189, 4969), (190, 4981), (197, 5038),

Gene: Doughnut_6 Start: 3571, Stop: 5079, Start Num: 19

Candidate Starts for Doughnut_6:

(Start: 19 @3571 has 44 MA's), (29, 3649), (50, 3871), (56, 3949), (64, 3985), (67, 4006), (71, 4033), (72, 4042), (75, 4081), (80, 4102), (85, 4147), (89, 4159), (95, 4198), (100, 4273), (135, 4498), (138, 4522), (151, 4663), (156, 4714), (165, 4756), (175, 4816), (182, 4876), (186, 4927), (189, 4954), (190, 4966), (197, 5023),

Gene: Efra2_10 Start: 4520, Stop: 6043, Start Num: 19

Candidate Starts for Efra2_10:

(6, 4400), (Start: 19 @4520 has 44 MA's), (29, 4598), (37, 4664), (50, 4787), (72, 4958), (75, 4997), (77, 5012), (80, 5021), (92, 5123), (93, 5129), (97, 5171), (109, 5255), (118, 5336), (121, 5354), (143, 5522), (151, 5618), (165, 5711), (175, 5771), (177, 5783), (181, 5828), (182, 5831), (189, 5918), (190, 5930), (198, 5990),

Gene: Findley_6 Start: 3574, Stop: 5094, Start Num: 19

Candidate Starts for Findley_6:

(Start: 19 @3574 has 44 MA's), (29, 3652), (50, 3874), (56, 3952), (64, 3988), (67, 4009), (71, 4036), (75, 4084), (80, 4105), (85, 4150), (89, 4162), (95, 4201), (100, 4276), (138, 4537), (151, 4678), (156, 4729), (165, 4771), (175, 4831), (182, 4891), (189, 4969), (190, 4981), (197, 5038),

Gene: Guanica15_10 Start: 4536, Stop: 6059, Start Num: 19

Candidate Starts for Guanica15_10:

(6, 4416), (Start: 19 @4536 has 44 MA's), (29, 4614), (37, 4680), (50, 4803), (72, 4974), (75, 5013), (77, 5028), (80, 5037), (92, 5139), (93, 5145), (97, 5187), (109, 5271), (118, 5352), (121, 5370), (143, 5538), (151, 5634), (165, 5727), (175, 5787), (177, 5799), (181, 5844), (182, 5847), (189, 5934), (190, 5946), (198, 6006),

Gene: Ibrahim_5 Start: 4170, Stop: 5918, Start Num: 2

Candidate Starts for Ibrahim_5:

(Start: 2 @4170 has 7 MA's), (11, 4239), (50, 4575), (70, 4737), (74, 4773), (81, 4827), (93, 4944), (97, 4992), (112, 5127), (130, 5265), (147, 5469), (148, 5472), (149, 5475), (150, 5493), (165, 5598), (182, 5718), (183, 5721), (189, 5796), (196, 5862),

Gene: IdentityCrisis_4 Start: 3597, Stop: 5054, Start Num: 19

Candidate Starts for IdentityCrisis_4:

(Start: 19 @3597 has 44 MA's), (43, 3804), (53, 3846), (55, 3888), (63, 3939), (71, 3990), (75, 4038), (79, 4059), (86, 4116), (99, 4230), (106, 4260), (125, 4386), (128, 4410), (131, 4419), (133, 4443), (165, 4722), (166, 4728), (168, 4746), (182, 4842), (188, 4917), (189, 4920), (190, 4932), (196, 4989), (200, 5031),

Gene: Jolie2_4 Start: 3415, Stop: 5349, Start Num: 3

Candidate Starts for Jolie2_4:

(Start: 3 @3415 has 2 MA's), (13, 3484), (20, 3562), (38, 3721), (40, 3748), (48, 3847), (59, 3976), (62, 3994), (66, 4006), (76, 4102), (116, 4528), (120, 4561), (136, 4702), (143, 4768), (158, 4963), (159, 4966), (164, 4999), (176, 5071), (179, 5110), (181, 5137), (182, 5140), (189, 5218), (190, 5230), (195, 5278), (196, 5287), (197, 5290), (200, 5323), (201, 5326), (203, 5341),

Gene: KiSi_9 Start: 4421, Stop: 5917, Start Num: 19

Candidate Starts for KiSi_9:

(Start: 19 @4421 has 44 MA's), (29, 4499), (63, 4757), (67, 4781), (69, 4793), (72, 4817), (75, 4856), (97, 5030), (101, 5081), (109, 5114), (118, 5195), (125, 5234), (126, 5240), (134, 5300), (143, 5372), (151, 5501), (153, 5513), (162, 5576), (165, 5594), (167, 5603), (172, 5645), (181, 5711), (182, 5714), (186, 5765), (189, 5792), (193, 5843), (197, 5861), (200, 5894),

Gene: Krueger_9 Start: 4465, Stop: 5934, Start Num: 19

Candidate Starts for Krueger_9:

(Start: 2 @4324 has 7 MA's), (Start: 19 @4465 has 44 MA's), (29, 4543), (63, 4801), (67, 4825), (68, 4828), (75, 4900), (77, 4915), (80, 4924), (93, 5029), (97, 5074), (109, 5158), (111, 5182), (118, 5239), (143, 5422), (151, 5518), (153, 5530), (175, 5671), (182, 5731), (189, 5809), (190, 5821), (200, 5911),

Gene: LastHope_10 Start: 4563, Stop: 6086, Start Num: 19

Candidate Starts for LastHope_10:

(Start: 19 @4563 has 44 MA's), (29, 4641), (50, 4830), (63, 4941), (67, 4965), (72, 5001), (75, 5040), (77, 5055), (80, 5064), (92, 5166), (93, 5172), (97, 5214), (109, 5298), (118, 5379), (121, 5397), (134, 5493), (143, 5565), (151, 5661), (165, 5754), (175, 5814), (177, 5826), (181, 5871), (182, 5874), (189, 5961), (190, 5973), (198, 6033),

Gene: LeMond_9 Start: 4421, Stop: 5917, Start Num: 19

Candidate Starts for LeMond_9:

(Start: 19 @4421 has 44 MA's), (29, 4499), (63, 4757), (67, 4781), (69, 4793), (72, 4817), (75, 4856), (97, 5030), (101, 5081), (109, 5114), (118, 5195), (125, 5234), (126, 5240), (134, 5300), (143, 5372), (151, 5501), (153, 5513), (162, 5576), (165, 5594), (167, 5603), (172, 5645), (181, 5711), (182, 5714), (186, 5765), (189, 5792), (193, 5843), (197, 5861),

Gene: Lemuria_4 Start: 3443, Stop: 5377, Start Num: 3

Candidate Starts for Lemuria_4:

(Start: 3 @3443 has 2 MA's), (13, 3512), (20, 3590), (38, 3749), (45, 3836), (48, 3875), (49, 3890), (57, 3998), (59, 4004), (66, 4034), (76, 4130), (130, 4691), (136, 4739), (143, 4805), (158, 5000), (159, 5003), (164, 5036), (179, 5147), (181, 5174), (182, 5177), (189, 5249), (190, 5261), (196, 5315), (197, 5318), (200, 5351), (201, 5354), (203, 5369),

Gene: Marcoliusprime_6 Start: 3574, Stop: 5094, Start Num: 19

Candidate Starts for Marcoliusprime_6:

(Start: 19 @3574 has 44 MA's), (29, 3652), (50, 3874), (56, 3952), (64, 3988), (67, 4009), (71, 4036), (75, 4084), (80, 4105), (85, 4150), (89, 4162), (95, 4201), (100, 4276), (138, 4537), (151, 4678), (156,

4729), (165, 4771), (175, 4831), (182, 4891), (189, 4969), (190, 4981), (197, 5038),

Gene: MarkPhew_9 Start: 4375, Stop: 5835, Start Num: 19

Candidate Starts for MarkPhew_9:

(Start: 19 @4375 has 44 MA's), (29, 4453), (32, 4489), (63, 4711), (67, 4735), (69, 4747), (75, 4810), (97, 4984), (101, 5035), (105, 5053), (109, 5068), (118, 5149), (125, 5188), (143, 5323), (151, 5419), (153, 5431), (156, 5470), (165, 5512), (175, 5572), (177, 5584), (181, 5629), (182, 5632), (189, 5710), (190, 5722), (192, 5752), (195, 5767), (198, 5782), (200, 5812),

Gene: Marshawn_11 Start: 4973, Stop: 6472, Start Num: 19

Candidate Starts for Marshawn_11:

(12, 4910), (Start: 19 @4973 has 44 MA's), (29, 5051), (34, 5105), (39, 5132), (44, 5195), (50, 5246), (53, 5264), (63, 5357), (65, 5366), (67, 5381), (71, 5408), (72, 5417), (75, 5456), (77, 5471), (97, 5621), (109, 5705), (118, 5786), (132, 5870), (137, 5903), (143, 5960), (151, 6056), (152, 6062), (153, 6068), (156, 6107), (165, 6149), (175, 6209), (177, 6221), (181, 6266), (182, 6269), (189, 6347), (192, 6389), (197, 6416), (198, 6419), (200, 6449),

Gene: McMater_10 Start: 4612, Stop: 6129, Start Num: 19

Candidate Starts for McMater_10:

(Start: 19 @4612 has 44 MA's), (29, 4690), (50, 4879), (53, 4897), (67, 5014), (71, 5041), (72, 5050), (75, 5089), (77, 5104), (80, 5113), (92, 5215), (93, 5221), (96, 5251), (97, 5263), (109, 5347), (118, 5428), (134, 5545), (143, 5617), (151, 5713), (156, 5764), (165, 5806), (177, 5878), (182, 5926), (189, 6004), (190, 6016), (198, 6076),

Gene: Mendokysei_4 Start: 4077, Stop: 5855, Start Num: 2

Candidate Starts for Mendokysei_4:

(Start: 2 @4077 has 7 MA's), (16, 4209), (26, 4296), (30, 4344), (50, 4482), (60, 4590), (70, 4644), (88, 4803), (91, 4830), (93, 4851), (112, 5034), (114, 5091), (122, 5121), (144, 5358), (149, 5412), (165, 5535), (171, 5583), (172, 5586), (182, 5655), (183, 5658), (189, 5733), (190, 5745), (196, 5799),

Gene: Mercurio_5 Start: 4089, Stop: 6023, Start Num: 3

Candidate Starts for Mercurio_5:

(1, 3894), (Start: 3 @4089 has 2 MA's), (8, 4125), (13, 4158), (14, 4203), (20, 4236), (38, 4395), (45, 4482), (48, 4521), (59, 4650), (66, 4680), (76, 4776), (116, 5211), (119, 5238), (123, 5259), (136, 5385), (143, 5451), (145, 5499), (158, 5646), (159, 5649), (164, 5682), (169, 5712), (176, 5754), (179, 5793), (182, 5823), (189, 5895), (190, 5907), (194, 5949), (196, 5961), (197, 5964), (200, 5997), (201, 6000), (203, 6015),

Gene: Milly_6 Start: 3574, Stop: 5094, Start Num: 19

Candidate Starts for Milly_6:

(Start: 19 @3574 has 44 MA's), (29, 3652), (50, 3874), (56, 3952), (64, 3988), (67, 4009), (71, 4036), (75, 4084), (80, 4105), (85, 4150), (89, 4162), (95, 4201), (100, 4276), (138, 4537), (151, 4678), (156, 4729), (165, 4771), (175, 4831), (182, 4891), (189, 4969), (190, 4981), (197, 5038),

Gene: Mufasa_6 Start: 3571, Stop: 5079, Start Num: 19

Candidate Starts for Mufasa_6:

(Start: 19 @3571 has 44 MA's), (29, 3649), (50, 3871), (56, 3949), (64, 3985), (67, 4006), (71, 4033), (72, 4042), (75, 4081), (80, 4102), (85, 4147), (89, 4159), (95, 4198), (100, 4273), (135, 4498), (138, 4522), (151, 4663), (156, 4714), (165, 4756), (175, 4816), (182, 4876), (186, 4927), (189, 4954), (190, 4966), (197, 5023),

Gene: Nairb_5 Start: 4170, Stop: 5918, Start Num: 2

Candidate Starts for Nairb_5:

(Start: 2 @4170 has 7 MA's), (11, 4239), (50, 4575), (70, 4737), (74, 4773), (81, 4827), (93, 4944), (97, 4992), (112, 5127), (130, 5265), (147, 5469), (148, 5472), (149, 5475), (150, 5493), (165, 5598), (182, 5718), (183, 5721), (189, 5796), (196, 5862),

Gene: Nette_5 Start: 4077, Stop: 5855, Start Num: 2

Candidate Starts for Nette_5:

(Start: 2 @4077 has 7 MA's), (16, 4209), (26, 4296), (30, 4344), (50, 4482), (60, 4590), (70, 4644), (88, 4803), (91, 4830), (93, 4851), (112, 5034), (114, 5091), (122, 5121), (144, 5358), (149, 5412), (165, 5535), (171, 5583), (172, 5586), (182, 5655), (183, 5658), (189, 5733), (190, 5745), (196, 5799),

Gene: Nibb_9 Start: 4506, Stop: 5972, Start Num: 19

Candidate Starts for Nibb_9:

(7, 4416), (12, 4452), (Start: 19 @4506 has 44 MA's), (29, 4584), (32, 4620), (63, 4842), (69, 4878), (75, 4941), (97, 5115), (101, 5166), (109, 5199), (118, 5280), (125, 5319), (143, 5460), (151, 5556), (153, 5568), (156, 5607), (165, 5649), (175, 5709), (177, 5721), (181, 5766), (182, 5769), (189, 5847), (190, 5859), (192, 5889), (195, 5904), (197, 5916), (198, 5919), (200, 5949),

Gene: Niklas_10 Start: 4612, Stop: 6129, Start Num: 19

Candidate Starts for Niklas_10:

(Start: 19 @4612 has 44 MA's), (29, 4690), (50, 4879), (53, 4897), (67, 5014), (71, 5041), (72, 5050), (75, 5089), (77, 5104), (80, 5113), (92, 5215), (93, 5221), (96, 5251), (97, 5263), (109, 5347), (118, 5428), (134, 5545), (143, 5617), (151, 5713), (156, 5764), (165, 5806), (177, 5878), (182, 5926), (189, 6004), (190, 6016), (198, 6076),

Gene: Omnicron_8 Start: 4366, Stop: 5994, Start Num: 22

Candidate Starts for Omnicron_8:

(18, 4324), (Start: 19 @4333 has 44 MA's), (20, 4336), (21, 4345), (Start: 22 @4366 has 1 MA's), (28, 4408), (29, 4411), (33, 4453), (37, 4477), (50, 4564), (51, 4567), (55, 4624), (58, 4651), (67, 4699), (68, 4702), (69, 4711), (75, 4777), (79, 4798), (83, 4828), (87, 4870), (90, 4888), (93, 4921), (102, 5050), (103, 5053), (104, 5056), (108, 5071), (115, 5200), (117, 5218), (124, 5266), (137, 5404), (143, 5461), (157, 5632), (165, 5671), (171, 5719), (181, 5788), (182, 5791), (186, 5842), (189, 5869), (190, 5881), (193, 5920), (200, 5971),

Gene: Oscar_9 Start: 4422, Stop: 5918, Start Num: 19

Candidate Starts for Oscar_9:

(Start: 19 @4422 has 44 MA's), (29, 4500), (63, 4758), (67, 4782), (69, 4794), (72, 4818), (75, 4857), (97, 5031), (101, 5082), (109, 5115), (118, 5196), (125, 5235), (126, 5241), (134, 5301), (143, 5373), (151, 5502), (153, 5514), (162, 5577), (165, 5595), (167, 5604), (172, 5646), (181, 5712), (182, 5715), (186, 5766), (189, 5793), (190, 5805), (193, 5844), (197, 5862),

Gene: Peanam_10 Start: 4612, Stop: 6129, Start Num: 19

Candidate Starts for Peanam_10:

(Start: 19 @4612 has 44 MA's), (29, 4690), (50, 4879), (53, 4897), (67, 5014), (71, 5041), (72, 5050), (75, 5089), (77, 5104), (80, 5113), (92, 5215), (93, 5221), (96, 5251), (97, 5263), (109, 5347), (118, 5428), (134, 5545), (143, 5617), (151, 5713), (156, 5764), (165, 5806), (177, 5878), (182, 5926), (189, 6004), (190, 6016), (198, 6076),

Gene: PhelpsODU_9 Start: 4501, Stop: 5985, Start Num: 19

Candidate Starts for PhelpsODU_9:

(Start: 2 @4357 has 7 MA's), (15, 4480), (Start: 19 @4501 has 44 MA's), (29, 4579), (63, 4837), (67, 4861), (75, 4936), (77, 4951), (80, 4960), (93, 5065), (97, 5110), (105, 5179), (109, 5194), (118, 5275), (143, 5464), (151, 5560), (153, 5572), (154, 5593), (163, 5638), (165, 5653), (182, 5773), (189, 5860), (190, 5872),

Gene: Phrank_9 Start: 4464, Stop: 5945, Start Num: 19

Candidate Starts for Phrank_9:

(Start: 2 @4323 has 7 MA's), (Start: 19 @4464 has 44 MA's), (29, 4542), (63, 4800), (67, 4824), (72, 4860), (75, 4899), (80, 4923), (93, 5028), (97, 5073), (105, 5142), (109, 5157), (111, 5181), (113, 5196), (118, 5238), (143, 5433), (151, 5529), (156, 5580), (161, 5595), (165, 5622), (177, 5694), (182, 5742), (189, 5820), (190, 5832), (192, 5862),

Gene: Rando14_8 Start: 4362, Stop: 6023, Start Num: 19

Candidate Starts for Rando14_8:

(Start: 3 @4236 has 2 MA's), (4, 4242), (5, 4245), (18, 4353), (Start: 19 @4362 has 44 MA's), (20, 4365), (21, 4374), (Start: 22 @4395 has 1 MA's), (28, 4437), (29, 4440), (37, 4506), (50, 4593), (51, 4596), (67, 4728), (69, 4740), (75, 4806), (79, 4827), (84, 4878), (87, 4899), (90, 4917), (93, 4950), (102, 5079), (103, 5082), (104, 5085), (115, 5229), (117, 5247), (124, 5295), (137, 5433), (143, 5490), (157, 5661), (160, 5667), (165, 5700), (171, 5748), (178, 5775), (181, 5817), (182, 5820), (186, 5871), (189, 5898), (190, 5910), (193, 5949), (200, 6000),

Gene: Richo_10 Start: 4612, Stop: 6129, Start Num: 19

Candidate Starts for Richo_10:

(Start: 19 @4612 has 44 MA's), (29, 4690), (50, 4879), (53, 4897), (67, 5014), (71, 5041), (72, 5050), (75, 5089), (77, 5104), (80, 5113), (92, 5215), (93, 5221), (96, 5251), (97, 5263), (109, 5347), (118, 5428), (134, 5545), (143, 5617), (151, 5713), (156, 5764), (165, 5806), (177, 5878), (182, 5926), (189, 6004), (190, 6016), (198, 6076),

Gene: RonRayGun_5 Start: 4170, Stop: 5918, Start Num: 2

Candidate Starts for RonRayGun_5:

(Start: 2 @4170 has 7 MA's), (11, 4239), (50, 4575), (70, 4737), (74, 4773), (81, 4827), (93, 4944), (97, 4992), (112, 5127), (130, 5265), (147, 5469), (148, 5472), (149, 5475), (150, 5493), (165, 5598), (182, 5718), (183, 5721), (189, 5796), (196, 5862),

Gene: Scarlett_9 Start: 4421, Stop: 5917, Start Num: 19

Candidate Starts for Scarlett_9:

(Start: 19 @4421 has 44 MA's), (29, 4499), (63, 4757), (67, 4781), (69, 4793), (72, 4817), (75, 4856), (97, 5030), (101, 5081), (109, 5114), (118, 5195), (125, 5234), (126, 5240), (134, 5300), (143, 5372), (151, 5501), (153, 5513), (162, 5576), (165, 5594), (167, 5603), (172, 5645), (181, 5711), (182, 5714), (186, 5765), (189, 5792), (190, 5804), (193, 5843), (197, 5861),

Gene: Shadow1_8 Start: 4372, Stop: 5856, Start Num: 19

Candidate Starts for Shadow1_8:

(Start: 2 @4231 has 7 MA's), (Start: 19 @4372 has 44 MA's), (29, 4450), (63, 4708), (67, 4732), (72, 4768), (75, 4807), (80, 4831), (93, 4936), (97, 4981), (105, 5050), (109, 5065), (111, 5089), (113, 5104), (118, 5146), (143, 5335), (151, 5431), (153, 5443), (154, 5464), (165, 5524), (182, 5644), (189, 5731), (190, 5743),

Gene: Shaobing_10 Start: 4612, Stop: 6129, Start Num: 19

Candidate Starts for Shaobing_10:

(Start: 19 @4612 has 44 MA's), (29, 4690), (50, 4879), (53, 4897), (67, 5014), (71, 5041), (72, 5050), (75, 5089), (77, 5104), (80, 5113), (92, 5215), (93, 5221), (96, 5251), (97, 5263), (109, 5347), (118, 5428), (134, 5545), (143, 5617), (151, 5713), (156, 5764), (165, 5806), (177, 5878), (182, 5926), (189, 6004), (190, 6016), (198, 6076),

Gene: SirPhilip_9 Start: 4316, Stop: 5803, Start Num: 19

Candidate Starts for SirPhilip_9:

(12, 4253), (Start: 19 @4316 has 44 MA's), (29, 4394), (32, 4430), (33, 4436), (58, 4628), (63, 4652), (67, 4676), (71, 4703), (72, 4712), (75, 4751), (77, 4766), (80, 4775), (92, 4877), (93, 4883), (97, 4925), (109, 5009), (118, 5090), (138, 5228), (143, 5273), (146, 5321), (151, 5369), (155, 5405), (167, 5474), (171, 5513), (172, 5516), (173, 5519), (182, 5585), (183, 5588), (185, 5615), (189, 5672), (190, 5684), (192, 5714), (199, 5759), (201, 5780), (202, 5783),

Gene: Strobilo_6 Start: 3574, Stop: 5094, Start Num: 19

Candidate Starts for Strobilo_6:

(Start: 19 @3574 has 44 MA's), (29, 3652), (50, 3874), (56, 3952), (64, 3988), (67, 4009), (71, 4036), (75, 4084), (80, 4105), (85, 4150), (89, 4162), (95, 4201), (100, 4276), (138, 4537), (151, 4678), (156, 4729), (165, 4771), (175, 4831), (182, 4891), (189, 4969), (190, 4981), (197, 5038),

Gene: Sunflower1121_8 Start: 4371, Stop: 5858, Start Num: 19

Candidate Starts for Sunflower1121_8:

(Start: 2 @4230 has 7 MA's), (Start: 19 @4371 has 44 MA's), (29, 4449), (63, 4707), (67, 4731), (72, 4767), (75, 4806), (80, 4830), (93, 4935), (97, 4980), (105, 5049), (109, 5064), (111, 5088), (113, 5103), (118, 5145), (143, 5346), (151, 5442), (156, 5493), (161, 5508), (165, 5535), (177, 5607), (182, 5655), (189, 5733), (190, 5745), (192, 5775),

Gene: Syra333_9 Start: 4473, Stop: 5954, Start Num: 19

Candidate Starts for Syra333_9:

(Start: 2 @4332 has 7 MA's), (Start: 19 @4473 has 44 MA's), (29, 4551), (63, 4809), (67, 4833), (72, 4869), (75, 4908), (77, 4923), (80, 4932), (93, 5037), (97, 5082), (109, 5166), (111, 5190), (113, 5205), (118, 5247), (143, 5442), (151, 5538), (165, 5631), (182, 5751), (189, 5829), (190, 5841), (200, 5931),

Gene: TClif_9 Start: 4411, Stop: 5886, Start Num: 19

Candidate Starts for TClif_9:

(Start: 19 @4411 has 44 MA's), (29, 4489), (30, 4513), (63, 4747), (67, 4771), (71, 4798), (75, 4846), (77, 4861), (80, 4870), (93, 4978), (97, 5020), (109, 5104), (123, 5215), (143, 5374), (165, 5563), (177, 5635), (189, 5761), (198, 5833), (200, 5863),

Gene: TM4_6 Start: 3587, Stop: 5116, Start Num: 19

Candidate Starts for TM4_6:

(Start: 19 @3587 has 44 MA's), (29, 3665), (50, 3887), (56, 3965), (64, 4001), (67, 4022), (71, 4049), (72, 4058), (75, 4097), (80, 4118), (85, 4163), (89, 4175), (95, 4214), (100, 4289), (138, 4550), (151, 4700), (156, 4751), (165, 4793), (175, 4853), (177, 4865), (182, 4913), (186, 4964), (189, 4991), (190, 5003), (197, 5060),

Gene: Tierra_9 Start: 4466, Stop: 6649, Start Num: 19

Candidate Starts for Tierra_9:

(Start: 19 @4466 has 44 MA's), (27, 4538), (29, 4544), (32, 4580), (36, 4607), (58, 4778), (63, 4802), (67, 4826), (75, 4901), (77, 4916), (80, 4925), (93, 5030), (97, 5075), (105, 5144), (109, 5159), (129, 5333), (139, 5411), (140, 5414), (141, 5438), (163, 5636), (170, 5690), (174, 5708), (180, 5762), (184, 5783), (187, 5858), (191, 5909), (204, 6080), (205, 6137), (206, 6233), (207, 6299), (208, 6326), (209, 6398), (210, 6446), (211, 6524), (212, 6536),

Gene: Tigress9_9 Start: 4465, Stop: 5934, Start Num: 19

Candidate Starts for Tigress9_9:

(Start: 2 @4324 has 7 MA's), (Start: 19 @4465 has 44 MA's), (29, 4543), (63, 4801), (67, 4825), (68, 4828), (75, 4900), (77, 4915), (80, 4924), (93, 5029), (97, 5074), (109, 5158), (111, 5182), (118, 5239), (143, 5422), (151, 5518), (153, 5530), (175, 5671), (182, 5731), (189, 5809), (190, 5821), (200, 5911),

Gene: TingHuaYa_10 Start: 4567, Stop: 6090, Start Num: 19

Candidate Starts for TingHuaYa_10:

(6, 4450), (Start: 19 @4567 has 44 MA's), (29, 4645), (50, 4834), (63, 4945), (67, 4969), (75, 5044), (77, 5059), (80, 5068), (92, 5170), (93, 5176), (97, 5218), (109, 5302), (118, 5383), (121, 5401), (134, 5497), (143, 5569), (151, 5665), (165, 5758), (175, 5818), (177, 5830), (182, 5878), (189, 5965), (190, 5977), (198, 6037),

Gene: Unicorn_9 Start: 4501, Stop: 5985, Start Num: 19

Candidate Starts for Unicorn_9:

(Start: 2 @4357 has 7 MA's), (15, 4480), (Start: 19 @4501 has 44 MA's), (29, 4579), (63, 4837), (67, 4861), (75, 4936), (77, 4951), (80, 4960), (93, 5065), (97, 5110), (105, 5179), (109, 5194), (118, 5275), (143, 5464), (151, 5560), (153, 5572), (154, 5593), (163, 5638), (165, 5653), (182, 5773), (189, 5860), (190, 5872),

Gene: Validus_10 Start: 4528, Stop: 6045, Start Num: 19

Candidate Starts for Validus_10:

(9, 4426), (Start: 19 @4528 has 44 MA's), (24, 4570), (29, 4606), (63, 4906), (67, 4930), (71, 4957), (75, 5005), (77, 5020), (80, 5029), (92, 5131), (96, 5167), (97, 5179), (109, 5263), (118, 5344), (143, 5533), (151, 5629), (156, 5680), (165, 5722), (177, 5794), (181, 5839), (182, 5842), (189, 5920), (190, 5932), (198, 5992),

Gene: WST1_4 Start: 3597, Stop: 5054, Start Num: 19

Candidate Starts for WST1_4:

(Start: 19 @3597 has 44 MA's), (43, 3804), (53, 3846), (55, 3888), (63, 3939), (71, 3990), (75, 4038), (79, 4059), (86, 4116), (99, 4230), (106, 4260), (125, 4386), (128, 4410), (131, 4419), (133, 4443), (165, 4722), (166, 4728), (168, 4746), (182, 4842), (188, 4917), (189, 4920), (190, 4932), (196, 4989), (200, 5031),

Gene: Whitty_5 Start: 4170, Stop: 5918, Start Num: 2

Candidate Starts for Whitty_5:

(Start: 2 @4170 has 7 MA's), (11, 4239), (50, 4575), (70, 4737), (74, 4773), (81, 4827), (93, 4944), (97, 4992), (112, 5127), (130, 5265), (147, 5469), (148, 5472), (149, 5475), (150, 5493), (165, 5598), (182, 5718), (183, 5721), (189, 5796), (196, 5862),

Gene: Ximenita_10 Start: 4640, Stop: 6121, Start Num: 19

Candidate Starts for Ximenita_10:

(Start: 2 @4499 has 7 MA's), (Start: 19 @4640 has 44 MA's), (29, 4718), (63, 4976), (67, 5000), (75, 5075), (77, 5090), (80, 5099), (93, 5204), (97, 5249), (109, 5333), (111, 5357), (113, 5372), (118, 5414), (143, 5609), (151, 5705), (165, 5798), (182, 5918), (189, 5996), (190, 6008), (200, 6098),

Gene: Yuna_10 Start: 4624, Stop: 6123, Start Num: 19

Candidate Starts for Yuna_10:

(Start: 2 @4480 has 7 MA's), (9, 4525), (Start: 19 @4624 has 44 MA's), (29, 4702), (63, 4960), (67, 4984), (75, 5059), (77, 5074), (93, 5188), (97, 5236), (101, 5287), (109, 5320), (127, 5476), (143, 5602), (151, 5698), (153, 5710), (165, 5791), (175, 5851), (177, 5863), (181, 5908), (182, 5911), (189, 5998), (190, 6010), (192, 6040), (200, 6100),

Gene: Yunkel11_10 Start: 4536, Stop: 6059, Start Num: 19

Candidate Starts for Yunkel11_10:

(6, 4416), (Start: 19 @4536 has 44 MA's), (29, 4614), (37, 4680), (50, 4803), (72, 4974), (75, 5013), (77, 5028), (80, 5037), (92, 5139), (93, 5145), (97, 5187), (109, 5271), (118, 5352), (121, 5370), (143, 5538), (151, 5634), (165, 5727), (175, 5787), (177, 5799), (181, 5844), (182, 5847), (189, 5934), (190, 5946), (198, 6006),

Gene: ZenTime222_5 Start: 4170, Stop: 5918, Start Num: 2

Candidate Starts for ZenTime222_5:

(Start: 2 @4170 has 7 MA's), (11, 4239), (50, 4575), (70, 4737), (74, 4773), (81, 4827), (93, 4944), (97, 4992), (112, 5127), (130, 5265), (147, 5469), (148, 5472), (149, 5475), (150, 5493), (165, 5598), (182, 5718), (183, 5721), (189, 5796), (196, 5862),

Gene: ZoeJ_6 Start: 3565, Stop: 5052, Start Num: 19

Candidate Starts for ZoeJ_6:

(Start: 19 @3565 has 44 MA's), (29, 3643), (47, 3808), (50, 3853), (56, 3931), (64, 3967), (67, 3988), (71, 4015), (75, 4063), (80, 4084), (85, 4129), (89, 4141), (95, 4180), (100, 4255), (110, 4312), (135, 4471), (138, 4495), (151, 4636), (156, 4687), (165, 4729), (175, 4789), (182, 4849), (186, 4900), (189, 4927), (190, 4939), (197, 4996),