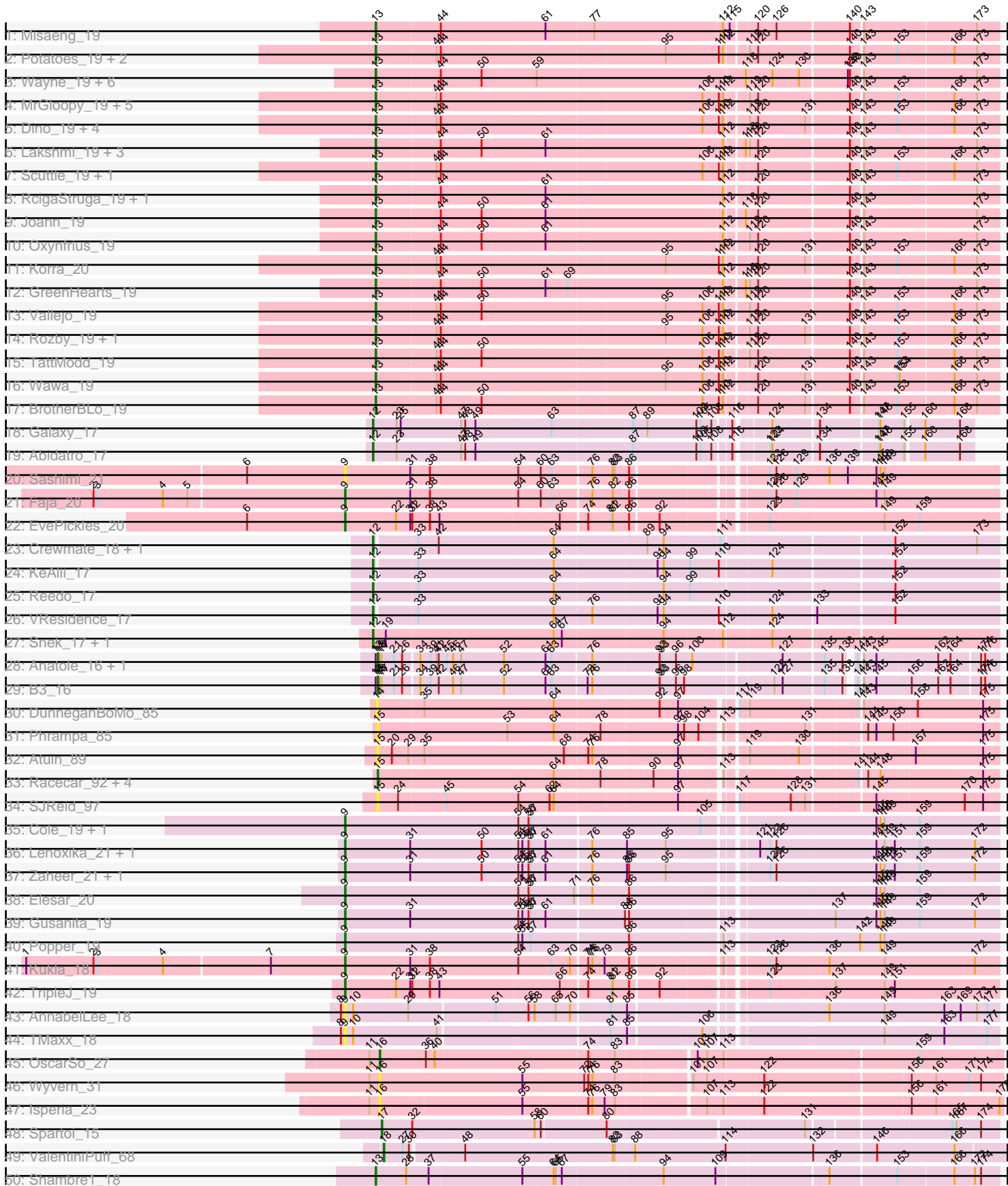


Pham 195558



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 195558 Report

This analysis was run 12/09/24 on database version 580.

Pham number 195558 has 83 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Misaeng_19
- Track 2 : Potatoes_19, Immaculata_19, Cholula_19
- Track 3 : Wayne_19, CallieOMalley_19, Canowicakte_19, Litotes_19, AppleCider_19, PartyCup_19, Suppi_19
- Track 4 : MrGloopy_19, Jumboset_19, MeganNoll_19, Fluke_19, RAP15_19, Savage2526_19
- Track 5 : Dino_19, Carpal_19, Glenn_19, Kalizoi_19, Zorro_19
- Track 6 : Lakshmi_19, Albanese_19, Nubia_19, Greenhouse_19
- Track 7 : Scuttle_19, Beethoven_19
- Track 8 : RcigaStruga_19, Huntingdon_19
- Track 9 : Joann_19
- Track 10 : Oxynfrius_19
- Track 11 : Korra_20
- Track 12 : GreenHearts_19
- Track 13 : Vallejo_19
- Track 14 : Rozby_19, Riverdale_19
- Track 15 : TattModd_19
- Track 16 : Wawa_19
- Track 17 : BrotherBLo_19
- Track 18 : Galaxy_17
- Track 19 : Abidatro_17
- Track 20 : Sashimi_21
- Track 21 : Faja_20
- Track 22 : EvePickles_20
- Track 23 : Crewmate_18, ObiToo_17
- Track 24 : KeAlii_17
- Track 25 : Reedo_17
- Track 26 : VResidence_17
- Track 27 : Snek_17, Tweety19_17
- Track 28 : Anatole_16, E1_16
- Track 29 : B3_16
- Track 30 : DunneganBoMo_85
- Track 31 : Phrampa_85
- Track 32 : Atuin_89
- Track 33 : Racecar_92, Talia1610_91, Mimi_97, Bloom_95, Patbob_92
- Track 34 : SJReid_97
- Track 35 : Cole_19, QuinnAvery_20

- Track 36 : Lenoxika_21, Nandita_21
- Track 37 : Zaheer_21, Ryan_21
- Track 38 : Elesar_20
- Track 39 : Gusanita_19
- Track 40 : Popper_19
- Track 41 : Kukla_18
- Track 42 : TripleJ_19
- Track 43 : AnnabelLee_18
- Track 44 : TMaxx_18
- Track 45 : OscarSo_27
- Track 46 : Wyvern_31
- Track 47 : Isperia_23
- Track 48 : Spartoi_15
- Track 49 : ValentiniPuff_68
- Track 50 : Shambre1_18

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

The start number called the most often in the published annotations is 13, it was called in 40 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese_19, AppleCider_19, Beethoven_19, BrotherBLo_19, CallieOMalley_19, Canowicakte_19, Carpal_19, Cholula_19, Dino_19, Fluke_19, Glenn_19, GreenHearts_19, Greenhouse_19, Huntingdon_19, Immaculata_19, Joann_19, Jumboset_19, Kalizoi_19, Korra_20, Lakshmi_19, Litotes_19, MeganNoll_19, Misaeng_19, MrGloopy_19, Nubia_19, Oxyfnrius_19, PartyCup_19, Potatoes_19, RAP15_19, RcigaStruga_19, Riverdale_19, Rozby_19, Savage2526_19, Scuttle_19, Shambre1_18, Suppi_19, TattModd_19, Vallejo_19, Wawa_19, Wayne_19, Zorro_19,

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

- Anatole_16, B3_16, E1_16,

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

- Abidatro_17, AnnabelLee_18, Atuin_89, Bloom_95, Cole_19, Crewmate_18, DunneganBoMo_85, Elesar_20, EvePickles_20, Faja_20, Galaxy_17, Gusanita_19, Isperia_23, KeAlii_17, Kukla_18, Lenoxika_21, Mimi_97, Nandita_21, ObiToo_17, OscarSo_27, Patbob_92, Phrampa_85, Popper_19, QuinnAvery_20, Racecar_92, Reedo_17, Ryan_21, SJReid_97, Sashimi_21, Snek_17, Spartoi_15, TMaxx_18, Talia1610_91, TripleJ_19, Tweety19_17, VResidence_17, ValentiniPuff_68, Wyvern_31, Zaheer_21,

Summary by start number:

Start 9:

- Found in 16 of 83 (19.3%) of genes in pham
- Manual Annotations of this start: 11 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnabelLee_18 (FR), Cole_19 (FF), Elesar_20 (FF), EvePickles_20 (AY), Faja_20 (AY), Gusanita_19 (FF), Kukla_18 (FJ),

Lenoxika_21 (FF), Nandita_21 (FF), Popper_19 (FF), QuinnAvery_20 (FF), Ryan_21 (FF), Sashimi_21 (AY), TMaxx_18 (FR), TripleJ_19 (FJ), Zaheer_21 (FF),

Start 12:

- Found in 9 of 83 (10.8%) of genes in pham
- Manual Annotations of this start: 9 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abidatro_17 (AS1), Crewmate_18 (AZ1), Galaxy_17 (AS1), KeAlii_17 (AZ1), ObiToo_17 (AZ1), Reedo_17 (AZ1), Snek_17 (AZ3), Tweety19_17 (AZ3), VResidence_17 (AZ1),

Start 13:

- Found in 44 of 83 (53.0%) of genes in pham
- Manual Annotations of this start: 40 of 68
- Called 93.2% of time when present
- Phage (with cluster) where this start called: Albanese_19 (AK), AppleCider_19 (AK), Beethoven_19 (AK), BrotherBLo_19 (AK), CallieOMalley_19 (AK), Canowicakte_19 (AK), Carpal_19 (AK), Cholula_19 (AK), Dino_19 (AK), Fluke_19 (AK), Glenn_19 (AK), GreenHearts_19 (AK), Greenhouse_19 (AK), Huntingdon_19 (AK), Immaculata_19 (AK), Joann_19 (AK), Jumboset_19 (AK), Kalizoi_19 (AK), Korra_20 (AK), Lakshmi_19 (AK), Litotes_19 (AK), MeganNoll_19 (AK), Misaeng_19 (AK), MrGloopy_19 (AK), Nubia_19 (AK), Oxynfrius_19 (AK), PartyCup_19 (AK), Potatoes_19 (AK), RAP15_19 (AK), RcigaStruga_19 (AK), Riverdale_19 (AK), Rozby_19 (AK), Savage2526_19 (AK), Scuttle_19 (AK), Shambre1_18 (singleton), Suppi_19 (AK), TattModd_19 (AK), Vallejo_19 (AK), Wawa_19 (AK), Wayne_19 (AK), Zorro_19 (AK),

Start 14:

- Found in 1 of 83 (1.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DunneganBoMo_85 (FC),

Start 15:

- Found in 11 of 83 (13.3%) of genes in pham
- Manual Annotations of this start: 5 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anatole_16 (BV), Atuin_89 (FC), B3_16 (BV), Bloom_95 (FC), E1_16 (BV), Mimi_97 (FC), Patbob_92 (FC), Phrampa_85 (FC), Racecar_92 (FC), SJReid_97 (FC), Talia1610_91 (FC),

Start 16:

- Found in 6 of 83 (7.2%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Ispertia_23 (GJ), OscarSo_27 (GJ), Wyvern_31 (GJ),

Start 17:

- Found in 4 of 83 (4.8%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Spartoi_15 (singleton),

Start 18:

- Found in 1 of 83 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ValentiniPuff_68 (singleton),

Summary by clusters:

There are 12 clusters represented in this pham: AS1, FR, AK, singleton, BV, FC, FF, AY, AZ1, FJ, AZ3, GJ,

Info for manual annotations of cluster AK:

- Start number 13 was manually annotated 39 times for cluster AK.

Info for manual annotations of cluster AS1:

- Start number 12 was manually annotated 2 times for cluster AS1.

Info for manual annotations of cluster AY:

- Start number 9 was manually annotated 2 times for cluster AY.

Info for manual annotations of cluster AZ1:

- Start number 12 was manually annotated 5 times for cluster AZ1.

Info for manual annotations of cluster AZ3:

- Start number 12 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster BV:

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

Info for manual annotations of cluster FC:

- Start number 15 was manually annotated 2 times for cluster FC.

Info for manual annotations of cluster FF:

- Start number 9 was manually annotated 7 times for cluster FF.

Info for manual annotations of cluster FJ:

- Start number 9 was manually annotated 2 times for cluster FJ.

Info for manual annotations of cluster GJ:

- Start number 16 was manually annotated 1 time for cluster GJ.

Gene Information:

Gene: Abidatro_17 Start: 12853, Stop: 13671, Start Num: 12

Candidate Starts for Abidatro_17:

(Start: 12 @12853 has 9 MA's), (23, 12886), (47, 12979), (48, 12985), (49, 13000), (87, 13222), (102, 13315), (105, 13321), (108, 13336), (116, 13357), (123, 13396), (124, 13399), (134, 13462), (147, 13540), (148, 13543), (155, 13576), (160, 13600), (168, 13651),

Gene: Albanese_19 Start: 15218, Stop: 16090, Start Num: 13

Candidate Starts for Albanese_19:

(Start: 13 @15218 has 40 MA's), (44, 15311), (50, 15371), (61, 15461), (112, 15716), (118, 15740), (119, 15743), (120, 15755), (140, 15884), (143, 15899), (173, 16058),

Gene: Anatole_16 Start: 12979, Stop: 13818, Start Num: 15

Candidate Starts for Anatole_16:

(Start: 13 @12976 has 40 MA's), (Start: 15 @12979 has 5 MA's), (Start: 16 @12982 has 1 MA's), (Start: 17 @12985 has 1 MA's), (21, 13003), (26, 13015), (34, 13036), (39, 13051), (41, 13060), (42, 13063), (45, 13075), (46, 13084), (47, 13096), (52, 13159), (61, 13219), (63, 13228), (76, 13282), (92, 13375), (93, 13378), (96, 13399), (100, 13423), (127, 13543), (135, 13597), (138, 13621), (141, 13630), (143, 13633), (145, 13651), (162, 13738), (164, 13756), (174, 13792), (176, 13798),

Gene: AnnabelLee_18 Start: 11910, Stop: 12815, Start Num: 9

Candidate Starts for AnnabelLee_18:

(8, 11904), (Start: 9 @11910 has 11 MA's), (10, 11922), (29, 12000), (51, 12123), (56, 12168), (58, 12177), (65, 12207), (70, 12228), (81, 12282), (85, 12306), (136, 12567), (149, 12648), (163, 12735), (169, 12759), (173, 12783), (177, 12798),

Gene: AppleCider_19 Start: 15167, Stop: 16048, Start Num: 13

Candidate Starts for AppleCider_19:

(Start: 13 @15167 has 40 MA's), (44, 15260), (50, 15320), (59, 15398), (118, 15698), (124, 15734), (130, 15773), (139, 15839), (140, 15842), (143, 15857), (173, 16016),

Gene: Atuin_89 Start: 59949, Stop: 60800, Start Num: 15

Candidate Starts for Atuin_89:

(Start: 15 @59949 has 5 MA's), (20, 59970), (29, 59994), (35, 60015), (68, 60216), (74, 60249), (76, 60255), (97, 60375), (119, 60453), (130, 60525), (157, 60678), (175, 60777),

Gene: B3_16 Start: 12982, Stop: 13821, Start Num: 15

Candidate Starts for B3_16:

(Start: 13 @12979 has 40 MA's), (Start: 15 @12982 has 5 MA's), (Start: 16 @12985 has 1 MA's), (Start: 17 @12988 has 1 MA's), (21, 13006), (26, 13018), (34, 13039), (39, 13054), (42, 13066), (46, 13087), (47, 13099), (52, 13162), (61, 13222), (63, 13231), (73, 13279), (76, 13285), (92, 13378), (93, 13381), (96, 13402), (98, 13414), (125, 13534), (127, 13546), (135, 13600), (138, 13624), (141, 13633), (143, 13636), (145, 13654), (156, 13702), (162, 13741), (164, 13759), (174, 13795), (176, 13801),

Gene: Beethoven_19 Start: 15125, Stop: 15994, Start Num: 13

Candidate Starts for Beethoven_19:

(Start: 13 @15125 has 40 MA's), (41, 15212), (44, 15218), (106, 15593), (110, 15614), (112, 15620), (120, 15659), (140, 15788), (143, 15803), (153, 15851), (166, 15929), (173, 15962),

Gene: Bloom_95 Start: 60812, Stop: 61663, Start Num: 15

Candidate Starts for Bloom_95:

(Start: 15 @60812 has 5 MA's), (64, 61064), (78, 61130), (90, 61202), (97, 61238), (113, 61292), (141, 61466), (144, 61475), (148, 61493), (175, 61640),

Gene: BrotherBLo_19 Start: 15131, Stop: 16000, Start Num: 13

Candidate Starts for BrotherBLo_19:

(Start: 13 @15131 has 40 MA's), (41, 15218), (44, 15224), (50, 15284), (106, 15599), (110, 15620), (112, 15626), (120, 15665), (131, 15734), (140, 15794), (143, 15809), (153, 15857), (166, 15935), (173, 15968),

Gene: CallieOMalley_19 Start: 15167, Stop: 16048, Start Num: 13

Candidate Starts for CallieOMalley_19:

(Start: 13 @15167 has 40 MA's), (44, 15260), (50, 15320), (59, 15398), (118, 15698), (124, 15734), (130, 15773), (139, 15839), (140, 15842), (143, 15857), (173, 16016),

Gene: Canowicakte_19 Start: 15202, Stop: 16083, Start Num: 13

Candidate Starts for Canowicakte_19:

(Start: 13 @15202 has 40 MA's), (44, 15295), (50, 15355), (59, 15433), (118, 15733), (124, 15769), (130, 15808), (139, 15874), (140, 15877), (143, 15892), (173, 16051),

Gene: Carpal_19 Start: 15132, Stop: 16001, Start Num: 13

Candidate Starts for Carpal_19:

(Start: 13 @15132 has 40 MA's), (41, 15219), (44, 15225), (106, 15600), (110, 15621), (112, 15627), (119, 15654), (120, 15666), (131, 15735), (140, 15795), (143, 15810), (153, 15858), (166, 15936), (173, 15969),

Gene: Cholula_19 Start: 15177, Stop: 16046, Start Num: 13

Candidate Starts for Cholula_19:

(Start: 13 @15177 has 40 MA's), (41, 15264), (44, 15270), (95, 15591), (110, 15666), (112, 15672), (119, 15699), (120, 15711), (140, 15840), (143, 15855), (153, 15903), (166, 15981), (173, 16014),

Gene: Cole_19 Start: 15483, Stop: 16403, Start Num: 9

Candidate Starts for Cole_19:

(Start: 9 @15483 has 11 MA's), (54, 15735), (56, 15750), (57, 15753), (105, 15993), (145, 16224), (148, 16230), (149, 16236), (159, 16287),

Gene: Crewmate_18 Start: 13486, Stop: 14358, Start Num: 12

Candidate Starts for Crewmate_18:

(Start: 12 @13486 has 9 MA's), (33, 13543), (42, 13573), (64, 13738), (89, 13870), (94, 13894), (111, 13972), (152, 14206), (173, 14326),

Gene: Dino_19 Start: 15130, Stop: 15999, Start Num: 13

Candidate Starts for Dino_19:

(Start: 13 @15130 has 40 MA's), (41, 15217), (44, 15223), (106, 15598), (110, 15619), (112, 15625), (119, 15652), (120, 15664), (131, 15733), (140, 15793), (143, 15808), (153, 15856), (166, 15934), (173, 15967),

Gene: DunneganBoMo_85 Start: 56806, Stop: 57657, Start Num: 14

Candidate Starts for DunneganBoMo_85:

(14, 56806), (35, 56872), (64, 57058), (92, 57205), (97, 57232), (117, 57298), (119, 57310), (141, 57460), (143, 57463), (158, 57538), (175, 57634),

Gene: E1_16 Start: 12979, Stop: 13818, Start Num: 15

Candidate Starts for E1_16:

(Start: 13 @12976 has 40 MA's), (Start: 15 @12979 has 5 MA's), (Start: 16 @12982 has 1 MA's), (Start: 17 @12985 has 1 MA's), (21, 13003), (26, 13015), (34, 13036), (39, 13051), (41, 13060), (42, 13063), (45, 13075), (46, 13084), (47, 13096), (52, 13159), (61, 13219), (63, 13228), (76, 13282), (92, 13375), (93, 13378), (96, 13399), (100, 13423), (127, 13543), (135, 13597), (138, 13621), (141, 13630), (143, 13633), (145, 13651), (162, 13738), (164, 13756), (174, 13792), (176, 13798),

Gene: Elesar_20 Start: 15874, Stop: 16794, Start Num: 9

Candidate Starts for Elesar_20:

(Start: 9 @15874 has 11 MA's), (54, 16126), (56, 16141), (57, 16144), (71, 16207), (76, 16228), (86, 16282), (145, 16615), (148, 16621), (149, 16627), (159, 16678),

Gene: EvePickles_20 Start: 15163, Stop: 16071, Start Num: 9

Candidate Starts for EvePickles_20:

(6, 15019), (Start: 9 @15163 has 11 MA's), (22, 15238), (31, 15259), (32, 15262), (38, 15286), (43, 15298), (66, 15469), (74, 15505), (81, 15538), (82, 15541), (86, 15565), (92, 15604), (123, 15739), (149, 15904), (159, 15955),

Gene: Faja_20 Start: 15058, Stop: 15966, Start Num: 9

Candidate Starts for Faja_20:

(2, 14695), (3, 14701), (4, 14797), (5, 14833), (Start: 9 @15058 has 11 MA's), (31, 15154), (38, 15181), (54, 15304), (60, 15337), (63, 15352), (76, 15406), (82, 15436), (86, 15460), (123, 15634), (126, 15643), (129, 15673), (145, 15787), (149, 15799),

Gene: Fluke_19 Start: 15173, Stop: 16042, Start Num: 13

Candidate Starts for Fluke_19:

(Start: 13 @15173 has 40 MA's), (41, 15260), (44, 15266), (106, 15641), (110, 15662), (112, 15668), (119, 15695), (120, 15707), (140, 15836), (143, 15851), (153, 15899), (166, 15977), (173, 16010),

Gene: Galaxy_17 Start: 12859, Stop: 13677, Start Num: 12

Candidate Starts for Galaxy_17:

(Start: 12 @12859 has 9 MA's), (23, 12892), (25, 12898), (47, 12985), (48, 12991), (49, 13006), (63, 13114), (87, 13228), (89, 13249), (102, 13321), (105, 13327), (108, 13342), (116, 13363), (124, 13405), (134, 13468), (147, 13546), (148, 13549), (155, 13582), (160, 13606), (168, 13657),

Gene: Glenn_19 Start: 15182, Stop: 16051, Start Num: 13

Candidate Starts for Glenn_19:

(Start: 13 @15182 has 40 MA's), (41, 15269), (44, 15275), (106, 15650), (110, 15671), (112, 15677), (119, 15704), (120, 15716), (131, 15785), (140, 15845), (143, 15860), (153, 15908), (166, 15986), (173, 16019),

Gene: GreenHearts_19 Start: 15265, Stop: 16137, Start Num: 13

Candidate Starts for GreenHearts_19:

(Start: 13 @15265 has 40 MA's), (44, 15358), (50, 15418), (61, 15508), (69, 15541), (112, 15763), (118, 15787), (119, 15790), (120, 15802), (140, 15931), (143, 15946), (173, 16105),

Gene: Greenhouse_19 Start: 15189, Stop: 16061, Start Num: 13

Candidate Starts for Greenhouse_19:

(Start: 13 @15189 has 40 MA's), (44, 15282), (50, 15342), (61, 15432), (112, 15687), (118, 15711), (119, 15714), (120, 15726), (140, 15855), (143, 15870), (173, 16029),

Gene: Gusanita_19 Start: 15698, Stop: 16618, Start Num: 9

Candidate Starts for Gusanita_19:

(Start: 9 @15698 has 11 MA's), (31, 15794), (54, 15950), (55, 15956), (56, 15965), (57, 15968), (61, 15989), (84, 16100), (86, 16106), (137, 16379), (145, 16439), (148, 16445), (149, 16451), (159, 16502), (172, 16583),

Gene: Huntingdon_19 Start: 15175, Stop: 16047, Start Num: 13

Candidate Starts for Huntingdon_19:

(Start: 13 @15175 has 40 MA's), (44, 15268), (61, 15418), (112, 15673), (120, 15712), (140, 15841), (143, 15856), (173, 16015),

Gene: Immaculata_19 Start: 15176, Stop: 16045, Start Num: 13

Candidate Starts for Immaculata_19:

(Start: 13 @15176 has 40 MA's), (41, 15263), (44, 15269), (95, 15590), (110, 15665), (112, 15671), (119, 15698), (120, 15710), (140, 15839), (143, 15854), (153, 15902), (166, 15980), (173, 16013),

Gene: Isperia_23 Start: 15256, Stop: 16134, Start Num: 16

Candidate Starts for Isperia_23:

(11, 15241), (Start: 16 @15256 has 1 MA's), (55, 15460), (74, 15553), (76, 15559), (79, 15577), (83, 15592), (107, 15712), (113, 15736), (122, 15793), (156, 16000), (161, 16036), (178, 16129),

Gene: Joann_19 Start: 15169, Stop: 16041, Start Num: 13

Candidate Starts for Joann_19:

(Start: 13 @15169 has 40 MA's), (44, 15262), (50, 15322), (61, 15412), (112, 15667), (118, 15691), (120, 15706), (140, 15835), (143, 15850), (173, 16009),

Gene: Jumboset_19 Start: 15125, Stop: 15994, Start Num: 13

Candidate Starts for Jumboset_19:

(Start: 13 @15125 has 40 MA's), (41, 15212), (44, 15218), (106, 15593), (110, 15614), (112, 15620), (119, 15647), (120, 15659), (140, 15788), (143, 15803), (153, 15851), (166, 15929), (173, 15962),

Gene: Kalizoi_19 Start: 15124, Stop: 15993, Start Num: 13

Candidate Starts for Kalizoi_19:

(Start: 13 @15124 has 40 MA's), (41, 15211), (44, 15217), (106, 15592), (110, 15613), (112, 15619), (119, 15646), (120, 15658), (131, 15727), (140, 15787), (143, 15802), (153, 15850), (166, 15928), (173, 15961),

Gene: KeAlii_17 Start: 13071, Stop: 13943, Start Num: 12

Candidate Starts for KeAlii_17:

(Start: 12 @13071 has 9 MA's), (33, 13128), (64, 13323), (91, 13470), (94, 13479), (99, 13515), (110, 13554), (124, 13626), (152, 13791),

Gene: Korra_20 Start: 15130, Stop: 15999, Start Num: 13

Candidate Starts for Korra_20:

(Start: 13 @15130 has 40 MA's), (41, 15217), (44, 15223), (95, 15544), (110, 15619), (112, 15625), (120, 15664), (131, 15733), (140, 15793), (143, 15808), (153, 15856), (166, 15934), (173, 15967),

Gene: Kukla_18 Start: 14545, Stop: 15453, Start Num: 9

Candidate Starts for Kukla_18:

(1, 14086), (2, 14185), (3, 14191), (4, 14287), (7, 14437), (Start: 9 @14545 has 11 MA's), (31, 14641), (38, 14668), (54, 14791), (63, 14839), (70, 14866), (74, 14887), (75, 14890), (76, 14893), (79, 14911), (86, 14947), (113, 15070), (123, 15121), (126, 15130), (136, 15205), (149, 15286), (172, 15418),

Gene: Lakshmi_19 Start: 15194, Stop: 16066, Start Num: 13

Candidate Starts for Lakshmi_19:

(Start: 13 @15194 has 40 MA's), (44, 15287), (50, 15347), (61, 15437), (112, 15692), (118, 15716), (119, 15719), (120, 15731), (140, 15860), (143, 15875), (173, 16034),

Gene: Lenoxika_21 Start: 15805, Stop: 16725, Start Num: 9

Candidate Starts for Lenoxika_21:

(Start: 9 @15805 has 11 MA's), (31, 15901), (50, 16006), (54, 16057), (55, 16063), (56, 16072), (57, 16075), (61, 16096), (76, 16159), (85, 16210), (95, 16267), (121, 16378), (123, 16393), (126, 16402), (145, 16546), (149, 16558), (151, 16573), (159, 16609), (172, 16690),

Gene: Litotes_19 Start: 15152, Stop: 16033, Start Num: 13

Candidate Starts for Litotes_19:

(Start: 13 @15152 has 40 MA's), (44, 15245), (50, 15305), (59, 15383), (118, 15683), (124, 15719), (130, 15758), (139, 15824), (140, 15827), (143, 15842), (173, 16001),

Gene: MeganNoll_19 Start: 15182, Stop: 16051, Start Num: 13

Candidate Starts for MeganNoll_19:

(Start: 13 @15182 has 40 MA's), (41, 15269), (44, 15275), (106, 15650), (110, 15671), (112, 15677), (119, 15704), (120, 15716), (140, 15845), (143, 15860), (153, 15908), (166, 15986), (173, 16019),

Gene: Mimi_97 Start: 60159, Stop: 61010, Start Num: 15

Candidate Starts for Mimi_97:

(Start: 15 @60159 has 5 MA's), (64, 60411), (78, 60477), (90, 60549), (97, 60585), (113, 60639), (141, 60813), (144, 60822), (148, 60840), (175, 60987),

Gene: Misaeng_19 Start: 15239, Stop: 16111, Start Num: 13

Candidate Starts for Misaeng_19:

(Start: 13 @15239 has 40 MA's), (44, 15332), (61, 15482), (77, 15551), (112, 15737), (115, 15743), (120, 15776), (126, 15803), (140, 15905), (143, 15920), (173, 16079),

Gene: MrGloopy_19 Start: 15116, Stop: 15985, Start Num: 13

Candidate Starts for MrGloopy_19:

(Start: 13 @15116 has 40 MA's), (41, 15203), (44, 15209), (106, 15584), (110, 15605), (112, 15611), (119, 15638), (120, 15650), (140, 15779), (143, 15794), (153, 15842), (166, 15920), (173, 15953),

Gene: Nandita_21 Start: 15809, Stop: 16729, Start Num: 9

Candidate Starts for Nandita_21:

(Start: 9 @15809 has 11 MA's), (31, 15905), (50, 16010), (54, 16061), (55, 16067), (56, 16076), (57, 16079), (61, 16100), (76, 16163), (85, 16214), (95, 16271), (121, 16382), (123, 16397), (126, 16406), (145, 16550), (149, 16562), (151, 16577), (159, 16613), (172, 16694),

Gene: Nubia_19 Start: 15154, Stop: 16026, Start Num: 13

Candidate Starts for Nubia_19:

(Start: 13 @15154 has 40 MA's), (44, 15247), (50, 15307), (61, 15397), (112, 15652), (118, 15676), (119, 15679), (120, 15691), (140, 15820), (143, 15835), (173, 15994),

Gene: ObiToo_17 Start: 13223, Stop: 14095, Start Num: 12

Candidate Starts for ObiToo_17:

(Start: 12 @13223 has 9 MA's), (33, 13280), (42, 13310), (64, 13475), (89, 13607), (94, 13631), (111, 13709), (152, 13943), (173, 14063),

Gene: OscarSo_27 Start: 17801, Stop: 18682, Start Num: 16

Candidate Starts for OscarSo_27:

(11, 17786), (Start: 16 @17801 has 1 MA's), (36, 17864), (40, 17876), (74, 18098), (83, 18137), (103, 18245), (107, 18257), (113, 18281), (159, 18560),

Gene: Oxynfrius_19 Start: 15167, Stop: 16039, Start Num: 13

Candidate Starts for Oxynfrius_19:

(Start: 13 @15167 has 40 MA's), (44, 15260), (50, 15320), (61, 15410), (112, 15665), (119, 15692), (120, 15704), (140, 15833), (143, 15848), (173, 16007),

Gene: PartyCup_19 Start: 15199, Stop: 16080, Start Num: 13

Candidate Starts for PartyCup_19:

(Start: 13 @15199 has 40 MA's), (44, 15292), (50, 15352), (59, 15430), (118, 15730), (124, 15766), (130, 15805), (139, 15871), (140, 15874), (143, 15889), (173, 16048),

Gene: Patbob_92 Start: 61031, Stop: 61882, Start Num: 15

Candidate Starts for Patbob_92:

(Start: 15 @61031 has 5 MA's), (64, 61283), (78, 61349), (90, 61421), (97, 61457), (113, 61511), (141, 61685), (144, 61694), (148, 61712), (175, 61859),

Gene: Phrampa_85 Start: 58344, Stop: 59195, Start Num: 15

Candidate Starts for Phrampa_85:

(Start: 15 @58344 has 5 MA's), (53, 58530), (64, 58596), (78, 58662), (97, 58770), (98, 58779), (104, 58797), (113, 58824), (131, 58929), (144, 59007), (145, 59019), (150, 59043), (175, 59172),

Gene: Popper_19 Start: 15336, Stop: 16256, Start Num: 9

Candidate Starts for Popper_19:

(Start: 9 @15336 has 11 MA's), (54, 15588), (55, 15594), (57, 15606), (86, 15744), (113, 15873), (142, 16053), (148, 16083), (149, 16089),

Gene: Potatoes_19 Start: 15177, Stop: 16046, Start Num: 13

Candidate Starts for Potatoes_19:

(Start: 13 @15177 has 40 MA's), (41, 15264), (44, 15270), (95, 15591), (110, 15666), (112, 15672), (119, 15699), (120, 15711), (140, 15840), (143, 15855), (153, 15903), (166, 15981), (173, 16014),

Gene: QuinnAvery_20 Start: 15821, Stop: 16741, Start Num: 9

Candidate Starts for QuinnAvery_20:

(Start: 9 @15821 has 11 MA's), (54, 16073), (56, 16088), (57, 16091), (105, 16331), (145, 16562), (148, 16568), (149, 16574), (159, 16625),

Gene: RAP15_19 Start: 15182, Stop: 16051, Start Num: 13

Candidate Starts for RAP15_19:

(Start: 13 @15182 has 40 MA's), (41, 15269), (44, 15275), (106, 15650), (110, 15671), (112, 15677), (119, 15704), (120, 15716), (140, 15845), (143, 15860), (153, 15908), (166, 15986), (173, 16019),

Gene: Racecar_92 Start: 60812, Stop: 61663, Start Num: 15

Candidate Starts for Racecar_92:

(Start: 15 @60812 has 5 MA's), (64, 61064), (78, 61130), (90, 61202), (97, 61238), (113, 61292), (141, 61466), (144, 61475), (148, 61493), (175, 61640),

Gene: RcigaStruga_19 Start: 15175, Stop: 16047, Start Num: 13

Candidate Starts for RcigaStruga_19:

(Start: 13 @15175 has 40 MA's), (44, 15268), (61, 15418), (112, 15673), (120, 15712), (140, 15841), (143, 15856), (173, 16015),

Gene: Reedo_17 Start: 13087, Stop: 13962, Start Num: 12

Candidate Starts for Reedo_17:

(Start: 12 @13087 has 9 MA's), (33, 13147), (64, 13342), (94, 13498), (99, 13534), (152, 13810),

Gene: Riverdale_19 Start: 15112, Stop: 15981, Start Num: 13

Candidate Starts for Riverdale_19:

(Start: 13 @15112 has 40 MA's), (41, 15199), (44, 15205), (95, 15526), (106, 15580), (110, 15601), (112, 15607), (119, 15634), (120, 15646), (131, 15715), (140, 15775), (143, 15790), (153, 15838), (166, 15916), (173, 15949),

Gene: Rozby_19 Start: 15113, Stop: 15982, Start Num: 13

Candidate Starts for Rozby_19:

(Start: 13 @15113 has 40 MA's), (41, 15200), (44, 15206), (95, 15527), (106, 15581), (110, 15602), (112, 15608), (119, 15635), (120, 15647), (131, 15716), (140, 15776), (143, 15791), (153, 15839), (166, 15917), (173, 15950),

Gene: Ryan_21 Start: 15955, Stop: 16875, Start Num: 9

Candidate Starts for Ryan_21:

(Start: 9 @15955 has 11 MA's), (31, 16051), (50, 16156), (54, 16207), (55, 16213), (56, 16222), (57, 16225), (61, 16246), (76, 16309), (85, 16360), (86, 16363), (95, 16417), (123, 16543), (126, 16552), (145, 16696), (148, 16702), (149, 16708), (151, 16723), (159, 16759), (172, 16840),

Gene: SJReid_97 Start: 60651, Stop: 61502, Start Num: 15

Candidate Starts for SJReid_97:

(Start: 15 @60651 has 5 MA's), (24, 60681), (45, 60750), (54, 60852), (62, 60897), (64, 60903), (97, 61077), (117, 61143), (128, 61215), (131, 61236), (145, 61326), (170, 61452), (175, 61479),

Gene: Sashimi_21 Start: 15164, Stop: 16072, Start Num: 9

Candidate Starts for Sashimi_21:

(6, 15020), (Start: 9 @15164 has 11 MA's), (31, 15260), (38, 15287), (54, 15410), (60, 15443), (63, 15458), (76, 15512), (82, 15542), (83, 15545), (86, 15566), (123, 15740), (126, 15749), (129, 15779), (136, 15824), (139, 15851), (145, 15893), (148, 15899), (149, 15905),

Gene: Savage2526_19 Start: 15176, Stop: 16045, Start Num: 13

Candidate Starts for Savage2526_19:

(Start: 13 @15176 has 40 MA's), (41, 15263), (44, 15269), (106, 15644), (110, 15665), (112, 15671), (119, 15698), (120, 15710), (140, 15839), (143, 15854), (153, 15902), (166, 15980), (173, 16013),

Gene: Scuttle_19 Start: 15181, Stop: 16050, Start Num: 13

Candidate Starts for Scuttle_19:

(Start: 13 @15181 has 40 MA's), (41, 15268), (44, 15274), (106, 15649), (110, 15670), (112, 15676), (120, 15715), (140, 15844), (143, 15859), (153, 15907), (166, 15985), (173, 16018),

Gene: Shambre1_18 Start: 14673, Stop: 15542, Start Num: 13

Candidate Starts for Shambre1_18:

(Start: 13 @14673 has 40 MA's), (28, 14718), (37, 14751), (55, 14883), (64, 14928), (65, 14931), (67, 14940), (94, 15084), (109, 15159), (136, 15309), (153, 15402), (166, 15480), (172, 15507), (174, 15516),

Gene: Snek_17 Start: 12117, Stop: 12995, Start Num: 12

Candidate Starts for Snek_17:

(Start: 12 @12117 has 9 MA's), (19, 12135), (64, 12375), (67, 12387), (94, 12531), (112, 12612), (124, 12678),

Gene: Spartoi_15 Start: 11996, Stop: 12856, Start Num: 17

Candidate Starts for Spartoi_15:

(Start: 17 @11996 has 1 MA's), (32, 12041), (58, 12218), (60, 12227), (80, 12320), (131, 12593), (165, 12788), (167, 12794), (174, 12830),

Gene: Suppi_19 Start: 15202, Stop: 16083, Start Num: 13

Candidate Starts for Suppi_19:

(Start: 13 @15202 has 40 MA's), (44, 15295), (50, 15355), (59, 15433), (118, 15733), (124, 15769), (130, 15808), (139, 15874), (140, 15877), (143, 15892), (173, 16051),

Gene: TMaxx_18 Start: 11767, Stop: 12675, Start Num: 9

Candidate Starts for TMaxx_18:

(8, 11761), (Start: 9 @11767 has 11 MA's), (10, 11779), (41, 11902), (81, 12142), (85, 12166), (106, 12268), (149, 12508), (163, 12595), (177, 12658),

Gene: Talia1610_91 Start: 60177, Stop: 61028, Start Num: 15

Candidate Starts for Talia1610_91:

(Start: 15 @60177 has 5 MA's), (64, 60429), (78, 60495), (90, 60567), (97, 60603), (113, 60657), (141, 60831), (144, 60840), (148, 60858), (175, 61005),

Gene: TattModd_19 Start: 15175, Stop: 16044, Start Num: 13

Candidate Starts for TattModd_19:

(Start: 13 @15175 has 40 MA's), (41, 15262), (44, 15268), (50, 15328), (106, 15643), (110, 15664), (112, 15670), (119, 15697), (120, 15709), (140, 15838), (143, 15853), (153, 15901), (166, 15979), (173, 16012),

Gene: TripleJ_19 Start: 15465, Stop: 16373, Start Num: 9

Candidate Starts for TripleJ_19:

(Start: 9 @15465 has 11 MA's), (22, 15540), (31, 15561), (32, 15564), (38, 15588), (43, 15600), (66, 15771), (74, 15807), (81, 15840), (82, 15843), (86, 15867), (92, 15906), (123, 16041), (137, 16134), (149, 16206), (151, 16221),

Gene: Tweety19_17 Start: 12116, Stop: 12994, Start Num: 12

Candidate Starts for Tweety19_17:

(Start: 12 @12116 has 9 MA's), (19, 12134), (64, 12374), (67, 12386), (94, 12530), (112, 12611), (124, 12677),

Gene: VResidence_17 Start: 13143, Stop: 14015, Start Num: 12

Candidate Starts for VResidence_17:

(Start: 12 @13143 has 9 MA's), (33, 13200), (64, 13395), (76, 13449), (91, 13542), (94, 13551), (110, 13626), (124, 13698), (133, 13755), (152, 13863),

Gene: ValentiniPuff_68 Start: 36653, Stop: 37528, Start Num: 18

Candidate Starts for ValentiniPuff_68:

(Start: 18 @36653 has 1 MA's), (27, 36680), (30, 36689), (48, 36761), (82, 36974), (83, 36977), (88, 37004), (114, 37136), (132, 37262), (146, 37343), (166, 37457),

Gene: Vallejo_19 Start: 15114, Stop: 15983, Start Num: 13

Candidate Starts for Vallejo_19:

(Start: 13 @15114 has 40 MA's), (41, 15201), (44, 15207), (50, 15267), (95, 15528), (106, 15582), (110, 15603), (112, 15609), (119, 15636), (120, 15648), (140, 15777), (143, 15792), (153, 15840), (166, 15918), (173, 15951),

Gene: Wawa_19 Start: 15151, Stop: 16020, Start Num: 13

Candidate Starts for Wawa_19:

(Start: 13 @15151 has 40 MA's), (41, 15238), (44, 15244), (95, 15565), (106, 15619), (110, 15640), (112, 15646), (120, 15685), (131, 15754), (140, 15814), (143, 15829), (153, 15877), (154, 15880), (166, 15955), (173, 15988),

Gene: Wayne_19 Start: 15248, Stop: 16129, Start Num: 13

Candidate Starts for Wayne_19:

(Start: 13 @15248 has 40 MA's), (44, 15341), (50, 15401), (59, 15479), (118, 15779), (124, 15815), (130, 15854), (139, 15920), (140, 15923), (143, 15938), (173, 16097),

Gene: Wyvern_31 Start: 16066, Stop: 16947, Start Num: 16

Candidate Starts for Wyvern_31:

(11, 16051), (Start: 16 @16066 has 1 MA's), (55, 16273), (72, 16360), (74, 16366), (76, 16372), (83, 16405), (101, 16507), (107, 16525), (122, 16606), (156, 16813), (161, 16849), (171, 16897), (174, 16915),

Gene: Zaheer_21 Start: 16044, Stop: 16964, Start Num: 9

Candidate Starts for Zaheer_21:

(Start: 9 @16044 has 11 MA's), (31, 16140), (50, 16245), (54, 16296), (55, 16302), (56, 16311), (57, 16314), (61, 16335), (76, 16398), (85, 16449), (86, 16452), (95, 16506), (123, 16632), (126, 16641), (145, 16785), (148, 16791), (149, 16797), (151, 16812), (159, 16848), (172, 16929),

Gene: Zorro_19 Start: 15130, Stop: 15999, Start Num: 13

Candidate Starts for Zorro_19:

(Start: 13 @15130 has 40 MA's), (41, 15217), (44, 15223), (106, 15598), (110, 15619), (112, 15625), (119, 15652), (120, 15664), (131, 15733), (140, 15793), (143, 15808), (153, 15856), (166, 15934), (173, 15967),