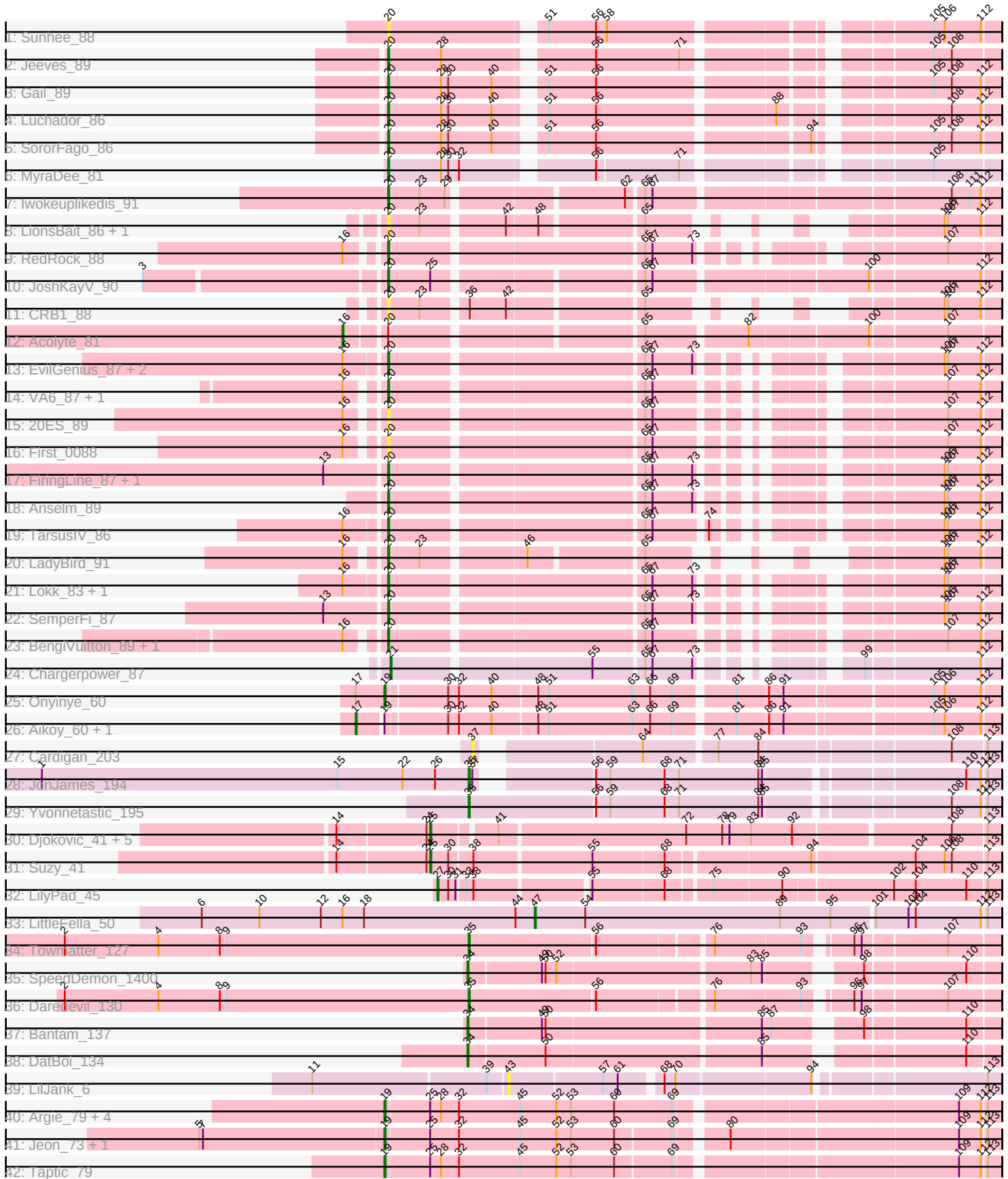


Pham 280462



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 280462 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280462 has 60 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Sunhee_88
- Track 2 : Jeeves_89
- Track 3 : Gail_89
- Track 4 : Luchador_86
- Track 5 : SororFago_86
- Track 6 : MyraDee_81
- Track 7 : Iwokeuplikedis_91
- Track 8 : LionsBait_86, HippoHollow_84
- Track 9 : RedRock_88
- Track 10 : JoshKayV_90
- Track 11 : CRB1_88
- Track 12 : Acolyte_81
- Track 13 : EvilGenius_87, ChipMunk_88, KingCyrus_86
- Track 14 : VA6_87, AN3_87
- Track 15 : 20ES_89
- Track 16 : First_0088
- Track 17 : FiringLine_87, QueenBeesly_87
- Track 18 : Anselm_89
- Track 19 : TarsusIV_86
- Track 20 : LadyBird_91
- Track 21 : Lokk_83, BobSwaget_82
- Track 22 : SemperFi_87
- Track 23 : BengiVuitton_89, Deloris_89
- Track 24 : Chargerpower_87
- Track 25 : Onyinye_60
- Track 26 : Aikoy_60, Leopard_59
- Track 27 : Cardigan_203
- Track 28 : JonJames_194
- Track 29 : Yvonnestic_195
- Track 30 : Djokovic_41, Madi_41, Beyoncage_41, Terapin_42, BiteSize_41, Sienna_41
- Track 31 : Suzy_41
- Track 32 : LilyPad_45
- Track 33 : LittleFella_50
- Track 34 : Towmatter_127
- Track 35 : SpeedDemon_1400
- Track 36 : Daredevil_130

- Track 37 : Bantam_137
- Track 38 : DatBoi_134
- Track 39 : LilJank_6
- Track 40 : Argie_79, D12_76, Megabear_76, PR_77, Cepens_78
- Track 41 : Jeon_73, GodPhather_77
- Track 42 : Taptic_79

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

The start number called the most often in the published annotations is 20, it was called in 23 of the 52 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES_89, AN3_87, Anselm_89, BengiVuitton_89, BobSwaget_82, CRB1_88, ChipMunk_88, Deloris_89, EvilGenius_87, FiringLine_87, First_0088, Gail_89, HippoHollow_84, Iwokeuplikedis_91, Jeeves_89, JoshKayV_90, KingCyrus_86, LadyBird_91, LionsBait_86, Lokk_83, Luchador_86, MyraDee_81, QueenBeesly_87, RedRock_88, SemperFi_87, SororFago_86, Sunhee_88, TarsusIV_86, VA6_87,

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

- Acolyte_81,

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

- Aikoy_60, Argie_79, Bantam_137, Beyoncage_41, BiteSize_41, Cardigan_203, Cepens_78, Chargerpower_87, D12_76, Daredevil_130, DatBoi_134, Djokovic_41, GodPhather_77, Jeon_73, JonJames_194, Leopard_59, LilJank_6, LilyPad_45, LittleFella_50, Madi_41, Megabear_76, Onyinye_60, PR_77, Sienna_41, SpeedDemon_1400, Suzy_41, Taptic_79, Terapin_42, Towmatter_127, Yvonnestic_195,

Summary by start number:

Start 16:

- Found in 16 of 60 (26.7%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Acolyte_81 (A2),

Start 17:

- Found in 3 of 60 (5.0%) of genes in pham
- Manual Annotations of this start: 2 of 52
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Aikoy_60 (AE), Leopard_59 (AE),

Start 19:

- Found in 11 of 60 (18.3%) of genes in pham
- Manual Annotations of this start: 9 of 52
- Called 81.8% of time when present
- Phage (with cluster) where this start called: Argie_79 (W), Cepens_78 (W), D12_76 (W), GodPhather_77 (W), Jeon_73 (W), Megabear_76 (W), Onyinye_60 (AE), PR_77

(W), Taptic_79 (W),

Start 20:

- Found in 30 of 60 (50.0%) of genes in pham
- Manual Annotations of this start: 23 of 52
- Called 96.7% of time when present
- Phage (with cluster) where this start called: 20ES_89 (A2), AN3_87 (A2), Anselm_89 (A2), BengiVuitton_89 (A2), BobSwaget_82 (A2), CRB1_88 (A2), ChipMunk_88 (A2), Deloris_89 (A2), EvilGenius_87 (A2), FiringLine_87 (A2), First_0088 (A2), Gail_89 (A14), HippoHollow_84 (A2), Iwokeuplikedis_91 (A2), Jeeves_89 (A14), JoshKayV_90 (A2), KingCyrus_86 (A2), LadyBird_91 (A2), LionsBait_86 (A2), Lokk_83 (A2), Luchador_86 (A14), MyraDee_81 (A18), QueenBeesly_87 (A2), RedRock_88 (A2), SemperFi_87 (A2), SororFago_86 (A14), Sunhee_88 (A14), TarsusIV_86 (A2), VA6_87 (A2),

Start 21:

- Found in 1 of 60 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chargerpower_87 (A22),

Start 25:

- Found in 16 of 60 (26.7%) of genes in pham
- Manual Annotations of this start: 7 of 52
- Called 43.8% of time when present
- Phage (with cluster) where this start called: Beyoncage_41 (DG1), BiteSize_41 (DG1), Djokovic_41 (DG1), Madi_41 (DG1), Sienna_41 (DG1), Suzy_41 (DG1), Terapin_42 (DG1),

Start 27:

- Found in 1 of 60 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilyPad_45 (DG1),

Start 34:

- Found in 3 of 60 (5.0%) of genes in pham
- Manual Annotations of this start: 3 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bantam_137 (DL), DatBoi_134 (DL), SpeedDemon_1400 (DL),

Start 35:

- Found in 4 of 60 (6.7%) of genes in pham
- Manual Annotations of this start: 4 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Daredevil_130 (DL), JonJames_194 (DD), Towmatter_127 (DL), Yvonnetastic_195 (DD),

Start 37:

- Found in 2 of 60 (3.3%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present

- Phage (with cluster) where this start called: Cardigan_203 (DD),

Start 43:

- Found in 1 of 60 (1.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilJank_6 (DU2),

Start 47:

- Found in 1 of 60 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LittleFella_50 (DG2),

Summary by clusters:

There are 11 clusters represented in this pham: A14, DL, AE, DD, A18, A22, DG2, A2, W, DG1, DU2,

Info for manual annotations of cluster A14:

- Start number 20 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A18:

- Start number 20 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:

- Start number 16 was manually annotated 1 time for cluster A2.
- Start number 20 was manually annotated 18 times for cluster A2.

Info for manual annotations of cluster A22:

- Start number 21 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster AE:

- Start number 17 was manually annotated 2 times for cluster AE.
- Start number 19 was manually annotated 1 time for cluster AE.

Info for manual annotations of cluster DD:

- Start number 35 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DG1:

- Start number 25 was manually annotated 7 times for cluster DG1.
- Start number 27 was manually annotated 1 time for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 47 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DL:

- Start number 34 was manually annotated 3 times for cluster DL.
- Start number 35 was manually annotated 2 times for cluster DL.

Info for manual annotations of cluster W:

- Start number 19 was manually annotated 8 times for cluster W.

Gene Information:

Gene: 20ES_89 Start: 49404, Stop: 48979, Start Num: 20

Candidate Starts for 20ES_89:

(Start: 16 @49428 has 1 MA's), (Start: 20 @49404 has 23 MA's), (65, 49209), (67, 49203), (107, 49020), (112, 48993),

Gene: AN3_87 Start: 47668, Stop: 47243, Start Num: 20

Candidate Starts for AN3_87:

(Start: 16 @47692 has 1 MA's), (Start: 20 @47668 has 23 MA's), (65, 47473), (67, 47467), (107, 47284), (112, 47257),

Gene: Acolyte_81 Start: 48464, Stop: 47973, Start Num: 16

Candidate Starts for Acolyte_81:

(Start: 16 @48464 has 1 MA's), (Start: 20 @48434 has 23 MA's), (65, 48245), (82, 48167), (100, 48074), (107, 48014),

Gene: Aikoy_60 Start: 43844, Stop: 44341, Start Num: 17

Candidate Starts for Aikoy_60:

(Start: 17 @43844 has 2 MA's), (Start: 19 @43862 has 9 MA's), (30, 43910), (32, 43919), (40, 43946), (48, 43982), (51, 43991), (63, 44060), (66, 44075), (69, 44093), (81, 44138), (86, 44162), (91, 44174), (105, 44288), (106, 44297), (112, 44327),

Gene: Anselm_89 Start: 49507, Stop: 49082, Start Num: 20

Candidate Starts for Anselm_89:

(Start: 20 @49507 has 23 MA's), (65, 49312), (67, 49306), (73, 49273), (106, 49126), (107, 49123), (112, 49096),

Gene: Argie_79 Start: 55898, Stop: 56383, Start Num: 19

Candidate Starts for Argie_79:

(Start: 19 @55898 has 9 MA's), (Start: 25 @55934 has 7 MA's), (28, 55943), (32, 55958), (45, 56009), (52, 56039), (53, 56051), (60, 56087), (69, 56135), (109, 56351), (112, 56369), (113, 56372),

Gene: Bantam_137 Start: 80637, Stop: 80239, Start Num: 34

Candidate Starts for Bantam_137:

(Start: 34 @80637 has 3 MA's), (49, 80580), (50, 80577), (85, 80406), (87, 80400), (98, 80343), (110, 80265),

Gene: BengiVuitton_89 Start: 49509, Stop: 49084, Start Num: 20

Candidate Starts for BengiVuitton_89:

(Start: 16 @49533 has 1 MA's), (Start: 20 @49509 has 23 MA's), (65, 49314), (67, 49308), (107, 49125), (112, 49098),

Gene: Beyoncage_41 Start: 33094, Stop: 33540, Start Num: 25

Candidate Starts for Beyoncage_41:

(14, 33019), (24, 33091), (Start: 25 @33094 has 7 MA's), (41, 33142), (72, 33292), (78, 33322), (79, 33328), (83, 33346), (92, 33379), (108, 33502), (113, 33529),

Gene: BiteSize_41 Start: 33180, Stop: 33626, Start Num: 25

Candidate Starts for BiteSize_41:

(14, 33105), (24, 33177), (Start: 25 @33180 has 7 MA's), (41, 33228), (72, 33378), (78, 33408), (79, 33414), (83, 33432), (92, 33465), (108, 33588), (113, 33615),

Gene: BobSwaget_82 Start: 46976, Stop: 46551, Start Num: 20

Candidate Starts for BobSwaget_82:

(Start: 16 @47006 has 1 MA's), (Start: 20 @46976 has 23 MA's), (65, 46781), (67, 46775), (73, 46742), (106, 46595), (107, 46592),

Gene: CRB1_88 Start: 49600, Stop: 49232, Start Num: 20

Candidate Starts for CRB1_88:

(Start: 20 @49600 has 23 MA's), (23, 49576), (36, 49543), (42, 49513), (65, 49411), (106, 49276), (107, 49273), (112, 49246),

Gene: Cardigan_203 Start: 96758, Stop: 96372, Start Num: 37

Candidate Starts for Cardigan_203:

(37, 96758), (64, 96644), (77, 96590), (84, 96557), (108, 96410), (113, 96383),

Gene: Cepens_78 Start: 55010, Stop: 55492, Start Num: 19

Candidate Starts for Cepens_78:

(Start: 19 @55010 has 9 MA's), (Start: 25 @55046 has 7 MA's), (28, 55055), (32, 55070), (45, 55121), (52, 55151), (53, 55163), (60, 55199), (69, 55244), (109, 55460), (112, 55478), (113, 55481),

Gene: Chargerpower_87 Start: 47632, Stop: 47207, Start Num: 21

Candidate Starts for Chargerpower_87:

(Start: 21 @47632 has 1 MA's), (55, 47476), (65, 47437), (67, 47431), (73, 47398), (99, 47311), (112, 47221),

Gene: ChipMunk_88 Start: 50564, Stop: 50139, Start Num: 20

Candidate Starts for ChipMunk_88:

(Start: 16 @50594 has 1 MA's), (Start: 20 @50564 has 23 MA's), (65, 50369), (67, 50363), (73, 50330), (106, 50183), (107, 50180), (112, 50153),

Gene: D12_76 Start: 55645, Stop: 56127, Start Num: 19

Candidate Starts for D12_76:

(Start: 19 @55645 has 9 MA's), (Start: 25 @55681 has 7 MA's), (28, 55690), (32, 55705), (45, 55756), (52, 55786), (53, 55798), (60, 55834), (69, 55879), (109, 56095), (112, 56113), (113, 56116),

Gene: Daredevil_130 Start: 77242, Stop: 76841, Start Num: 35

Candidate Starts for Daredevil_130:

(2, 77578), (4, 77500), (8, 77449), (9, 77443), (Start: 35 @77242 has 4 MA's), (56, 77140), (76, 77053), (93, 76984), (96, 76954), (97, 76948), (107, 76882),

Gene: DatBoi_134 Start: 79614, Stop: 79216, Start Num: 34

Candidate Starts for DatBoi_134:

(Start: 34 @79614 has 3 MA's), (50, 79554), (85, 79383), (110, 79242),

Gene: Deloris_89 Start: 49202, Stop: 48777, Start Num: 20

Candidate Starts for Deloris_89:

(Start: 16 @49226 has 1 MA's), (Start: 20 @49202 has 23 MA's), (65, 49007), (67, 49001), (107, 48818), (112, 48791),

Gene: Djokovic_41 Start: 33093, Stop: 33539, Start Num: 25

Candidate Starts for Djokovic_41:

(14, 33018), (24, 33090), (Start: 25 @33093 has 7 MA's), (41, 33141), (72, 33291), (78, 33321), (79, 33327), (83, 33345), (92, 33378), (108, 33501), (113, 33528),

Gene: EvilGenius_87 Start: 50565, Stop: 50140, Start Num: 20

Candidate Starts for EvilGenius_87:

(Start: 16 @50595 has 1 MA's), (Start: 20 @50565 has 23 MA's), (65, 50370), (67, 50364), (73, 50331), (106, 50184), (107, 50181), (112, 50154),

Gene: FiringLine_87 Start: 49451, Stop: 49026, Start Num: 20

Candidate Starts for FiringLine_87:

(13, 49499), (Start: 20 @49451 has 23 MA's), (65, 49256), (67, 49250), (73, 49217), (106, 49070), (107, 49067), (112, 49040),

Gene: First_0088 Start: 49307, Stop: 48882, Start Num: 20

Candidate Starts for First_0088:

(Start: 16 @49331 has 1 MA's), (Start: 20 @49307 has 23 MA's), (65, 49112), (67, 49106), (107, 48923), (112, 48896),

Gene: Gail_89 Start: 48855, Stop: 48409, Start Num: 20

Candidate Starts for Gail_89:

(Start: 20 @48855 has 23 MA's), (28, 48813), (30, 48807), (40, 48771), (51, 48741), (56, 48702), (105, 48462), (108, 48447), (112, 48423),

Gene: GodPhather_77 Start: 55342, Stop: 55824, Start Num: 19

Candidate Starts for GodPhather_77:

(5, 55195), (7, 55198), (Start: 19 @55342 has 9 MA's), (Start: 25 @55378 has 7 MA's), (32, 55402), (45, 55453), (52, 55483), (53, 55495), (60, 55531), (69, 55576), (80, 55612), (109, 55792), (112, 55810), (113, 55813),

Gene: HippoHollow_84 Start: 50112, Stop: 49744, Start Num: 20

Candidate Starts for HippoHollow_84:

(Start: 20 @50112 has 23 MA's), (23, 50088), (42, 50025), (48, 50001), (65, 49923), (106, 49788), (107, 49785), (112, 49758),

Gene: Iwokeuplikedis_91 Start: 49657, Stop: 49196, Start Num: 20

Candidate Starts for Iwokeuplikedis_91:

(Start: 20 @49657 has 23 MA's), (23, 49633), (29, 49612), (62, 49480), (65, 49468), (67, 49462), (108, 49234), (111, 49219), (112, 49210),

Gene: Jeeves_89 Start: 47635, Stop: 47189, Start Num: 20

Candidate Starts for Jeeves_89:

(Start: 20 @47635 has 23 MA's), (28, 47593), (56, 47482), (71, 47413), (105, 47242), (108, 47227),

Gene: Jeon_73 Start: 54835, Stop: 55317, Start Num: 19

Candidate Starts for Jeon_73:

(5, 54688), (7, 54691), (Start: 19 @54835 has 9 MA's), (Start: 25 @54871 has 7 MA's), (32, 54895), (45, 54946), (52, 54976), (53, 54988), (60, 55024), (69, 55069), (80, 55105), (109, 55285), (112, 55303), (113, 55306),

Gene: JonJames_194 Start: 97288, Stop: 96896, Start Num: 35

Candidate Starts for JonJames_194:

(1, 97642), (15, 97396), (22, 97342), (26, 97315), (Start: 35 @97288 has 4 MA's), (37, 97285), (56, 97210), (59, 97198), (68, 97153), (71, 97141), (84, 97075), (85, 97072), (110, 96922), (112, 96910),

(113, 96907),

Gene: JoshKayV_90 Start: 49922, Stop: 49461, Start Num: 20

Candidate Starts for JoshKayV_90:

(3, 50111), (Start: 20 @49922 has 23 MA's), (Start: 25 @49889 has 7 MA's), (65, 49733), (67, 49727), (100, 49562), (112, 49475),

Gene: KingCyrus_86 Start: 50578, Stop: 50153, Start Num: 20

Candidate Starts for KingCyrus_86:

(Start: 16 @50608 has 1 MA's), (Start: 20 @50578 has 23 MA's), (65, 50383), (67, 50377), (73, 50344), (106, 50197), (107, 50194), (112, 50167),

Gene: LadyBird_91 Start: 49745, Stop: 49377, Start Num: 20

Candidate Starts for LadyBird_91:

(Start: 16 @49769 has 1 MA's), (Start: 20 @49745 has 23 MA's), (23, 49721), (46, 49643), (65, 49556), (106, 49421), (107, 49418), (112, 49391),

Gene: Leopard_59 Start: 44129, Stop: 44626, Start Num: 17

Candidate Starts for Leopard_59:

(Start: 17 @44129 has 2 MA's), (Start: 19 @44147 has 9 MA's), (30, 44195), (32, 44204), (40, 44231), (48, 44267), (51, 44276), (63, 44345), (66, 44360), (69, 44378), (81, 44423), (86, 44447), (91, 44459), (105, 44573), (106, 44582), (112, 44612),

Gene: LilJank_6 Start: 1753, Stop: 1382, Start Num: 43

Candidate Starts for LilJank_6:

(11, 1909), (39, 1768), (43, 1753), (57, 1678), (61, 1666), (68, 1636), (70, 1627), (94, 1522), (113, 1393),

Gene: LilyPad_45 Start: 34622, Stop: 35053, Start Num: 27

Candidate Starts for LilyPad_45:

(Start: 27 @34622 has 1 MA's), (30, 34631), (31, 34637), (33, 34643), (38, 34649), (55, 34736), (68, 34793), (75, 34826), (90, 34880), (102, 34967), (104, 34985), (110, 35027), (113, 35042),

Gene: LionsBait_86 Start: 50052, Stop: 49684, Start Num: 20

Candidate Starts for LionsBait_86:

(Start: 20 @50052 has 23 MA's), (23, 50028), (42, 49965), (48, 49941), (65, 49863), (106, 49728), (107, 49725), (112, 49698),

Gene: LittleFella_50 Start: 36384, Stop: 36764, Start Num: 47

Candidate Starts for LittleFella_50:

(6, 36108), (10, 36156), (12, 36207), (Start: 16 @36225 has 1 MA's), (18, 36243), (44, 36369), (Start: 47 @36384 has 1 MA's), (54, 36426), (89, 36588), (95, 36630), (101, 36663), (103, 36690), (104, 36696), (112, 36750), (113, 36753),

Gene: Lokk_83 Start: 47597, Stop: 47172, Start Num: 20

Candidate Starts for Lokk_83:

(Start: 16 @47627 has 1 MA's), (Start: 20 @47597 has 23 MA's), (65, 47402), (67, 47396), (73, 47363), (106, 47216), (107, 47213),

Gene: Luchador_86 Start: 48736, Stop: 48290, Start Num: 20

Candidate Starts for Luchador_86:

(Start: 20 @48736 has 23 MA's), (28, 48694), (30, 48688), (40, 48652), (51, 48622), (56, 48583), (88, 48445), (108, 48328), (112, 48304),

Gene: Madi_41 Start: 33171, Stop: 33617, Start Num: 25

Candidate Starts for Madi_41:

(14, 33096), (24, 33168), (Start: 25 @33171 has 7 MA's), (41, 33219), (72, 33369), (78, 33399), (79, 33405), (83, 33423), (92, 33456), (108, 33579), (113, 33606),

Gene: Megabear_76 Start: 54933, Stop: 55415, Start Num: 19

Candidate Starts for Megabear_76:

(Start: 19 @54933 has 9 MA's), (Start: 25 @54969 has 7 MA's), (28, 54978), (32, 54993), (45, 55044), (52, 55074), (53, 55086), (60, 55122), (69, 55167), (109, 55383), (112, 55401), (113, 55404),

Gene: MyraDee_81 Start: 45138, Stop: 44695, Start Num: 20

Candidate Starts for MyraDee_81:

(Start: 20 @45138 has 23 MA's), (28, 45096), (30, 45090), (32, 45081), (56, 44985), (71, 44919), (105, 44748),

Gene: Onyinye_60 Start: 44029, Stop: 44508, Start Num: 19

Candidate Starts for Onyinye_60:

(Start: 17 @44011 has 2 MA's), (Start: 19 @44029 has 9 MA's), (30, 44077), (32, 44086), (40, 44113), (48, 44149), (51, 44158), (63, 44227), (66, 44242), (69, 44260), (81, 44305), (86, 44329), (91, 44341), (105, 44455), (106, 44464), (112, 44494),

Gene: PR_77 Start: 55622, Stop: 56104, Start Num: 19

Candidate Starts for PR_77:

(Start: 19 @55622 has 9 MA's), (Start: 25 @55658 has 7 MA's), (28, 55667), (32, 55682), (45, 55733), (52, 55763), (53, 55775), (60, 55811), (69, 55856), (109, 56072), (112, 56090), (113, 56093),

Gene: QueenBeesly_87 Start: 49451, Stop: 49026, Start Num: 20

Candidate Starts for QueenBeesly_87:

(13, 49499), (Start: 20 @49451 has 23 MA's), (65, 49256), (67, 49250), (73, 49217), (106, 49070), (107, 49067), (112, 49040),

Gene: RedRock_88 Start: 49617, Stop: 49192, Start Num: 20

Candidate Starts for RedRock_88:

(Start: 16 @49641 has 1 MA's), (Start: 20 @49617 has 23 MA's), (65, 49422), (67, 49416), (73, 49383), (107, 49233),

Gene: SemperFi_87 Start: 49339, Stop: 48914, Start Num: 20

Candidate Starts for SemperFi_87:

(13, 49387), (Start: 20 @49339 has 23 MA's), (65, 49144), (67, 49138), (73, 49105), (106, 48958), (107, 48955), (112, 48928),

Gene: Sienna_41 Start: 33171, Stop: 33617, Start Num: 25

Candidate Starts for Sienna_41:

(14, 33096), (24, 33168), (Start: 25 @33171 has 7 MA's), (41, 33219), (72, 33369), (78, 33399), (79, 33405), (83, 33423), (92, 33456), (108, 33579), (113, 33606),

Gene: SororFago_86 Start: 48617, Stop: 48171, Start Num: 20

Candidate Starts for SororFago_86:

(Start: 20 @48617 has 23 MA's), (28, 48575), (30, 48569), (40, 48533), (51, 48503), (56, 48464), (94, 48302), (105, 48224), (108, 48209), (112, 48185),

Gene: SpeedDemon_1400 Start: 83731, Stop: 83333, Start Num: 34

Candidate Starts for SpeedDemon_1400:

(Start: 34 @83731 has 3 MA's), (49, 83674), (50, 83671), (52, 83662), (83, 83509), (85, 83500), (98, 83437), (110, 83359),

Gene: Sunhee_88 Start: 47104, Stop: 46658, Start Num: 20

Candidate Starts for Sunhee_88:

(Start: 20 @47104 has 23 MA's), (51, 46990), (56, 46951), (58, 46942), (105, 46711), (106, 46702), (112, 46672),

Gene: Suzy_41 Start: 33689, Stop: 34132, Start Num: 25

Candidate Starts for Suzy_41:

(14, 33614), (24, 33686), (Start: 25 @33689 has 7 MA's), (30, 33704), (38, 33722), (55, 33815), (68, 33872), (94, 33980), (104, 34064), (106, 34088), (108, 34094), (113, 34121),

Gene: Taptic_79 Start: 55327, Stop: 55809, Start Num: 19

Candidate Starts for Taptic_79:

(Start: 19 @55327 has 9 MA's), (Start: 25 @55363 has 7 MA's), (28, 55372), (32, 55387), (45, 55438), (52, 55468), (53, 55480), (60, 55516), (69, 55561), (109, 55777), (112, 55795), (113, 55798),

Gene: TarsusIV_86 Start: 49301, Stop: 48876, Start Num: 20

Candidate Starts for TarsusIV_86:

(Start: 16 @49331 has 1 MA's), (Start: 20 @49301 has 23 MA's), (65, 49106), (67, 49100), (74, 49061), (106, 48920), (107, 48917), (112, 48890),

Gene: Terapin_42 Start: 33095, Stop: 33541, Start Num: 25

Candidate Starts for Terapin_42:

(14, 33020), (24, 33092), (Start: 25 @33095 has 7 MA's), (41, 33143), (72, 33293), (78, 33323), (79, 33329), (83, 33347), (92, 33380), (108, 33503), (113, 33530),

Gene: Towmatter_127 Start: 77323, Stop: 76922, Start Num: 35

Candidate Starts for Towmatter_127:

(2, 77659), (4, 77581), (8, 77530), (9, 77524), (Start: 35 @77323 has 4 MA's), (56, 77221), (76, 77134), (93, 77065), (96, 77035), (97, 77029), (107, 76963),

Gene: VA6_87 Start: 49239, Stop: 48814, Start Num: 20

Candidate Starts for VA6_87:

(Start: 16 @49263 has 1 MA's), (Start: 20 @49239 has 23 MA's), (65, 49044), (67, 49038), (107, 48855), (112, 48828),

Gene: Yvonnetastic_195 Start: 94338, Stop: 93922, Start Num: 35

Candidate Starts for Yvonnetastic_195:

(Start: 35 @94338 has 4 MA's), (56, 94236), (59, 94224), (68, 94179), (71, 94167), (84, 94101), (85, 94098), (108, 93960), (112, 93936), (113, 93933),