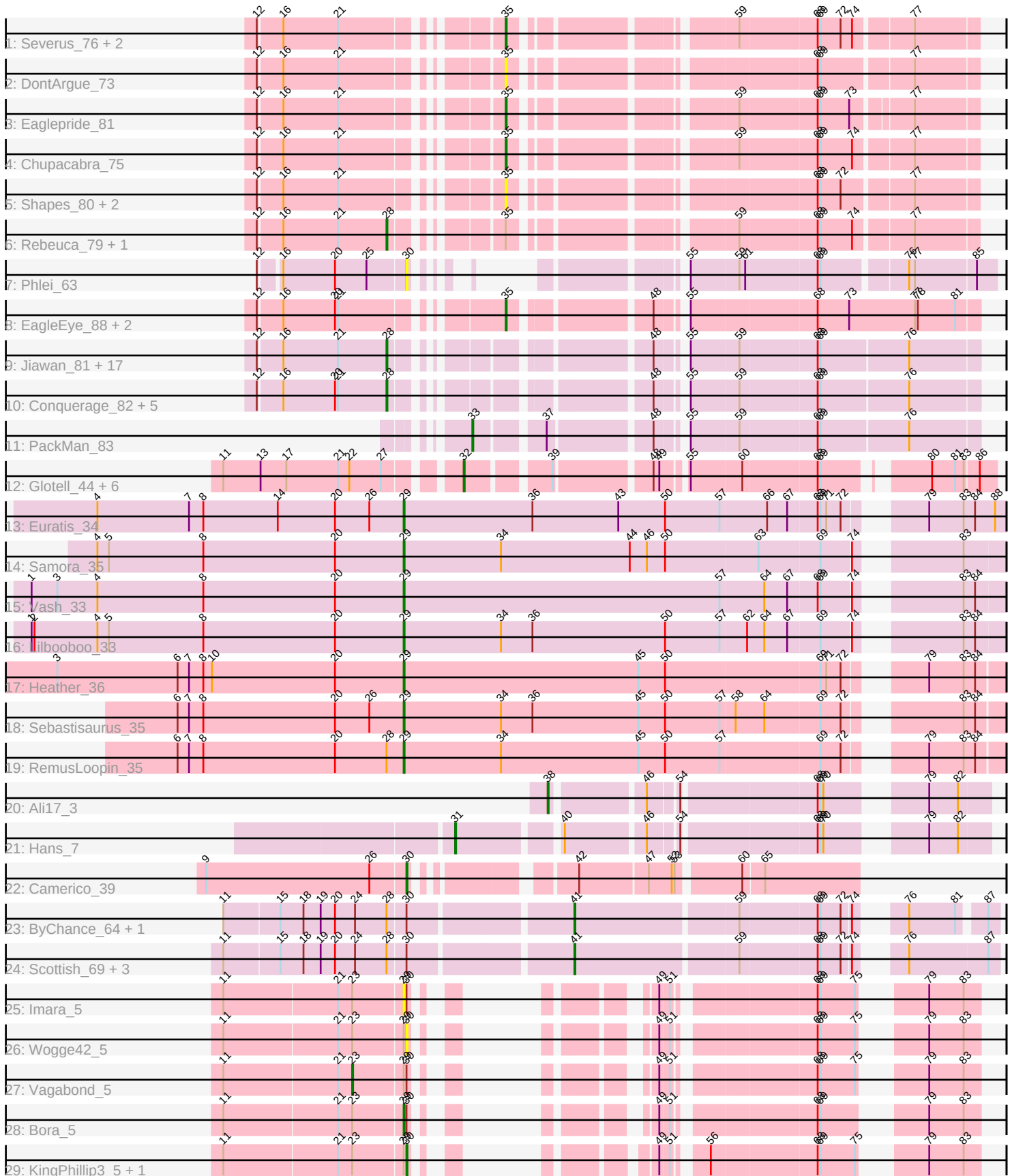


Pham 280413



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 280413 Report

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

Pham number 280413 has 69 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Severus_76, Poompha_75, PeaceMeal1_75
- Track 2 : DontArgue_73
- Track 3 : Eaglepride_81
- Track 4 : Chupacabra_75
- Track 5 : Shapes_80, Rowdy_80, DustyMartin_80
- Track 6 : Rebeuca_79, Twister_78
- Track 7 : Phlei_63
- Track 8 : EagleEye_88, Lucyedi_87, PainterBoy_86
- Track 9 : Jiawan_81, Myxus_84, Hanray_82, Tubs_84, EdogawaKiddo_82, RyeScarlet_85, Beemo_84, Onglai_82, Catalina_86, HortumSL17_85, Lilleskat_81, Phonnegut_84, Holec_82, Sachima_80, Phaeder_84, Pioneer_84, Scherzo_82, Fayely_82
- Track 10 : Conquerage_82, Qobbit_82, EmyBug_81, Alma_82, Ayanochan_82, Eidsmoe_82
- Track 11 : PackMan_83
- Track 12 : Glotell_44, Camara_43, Amphitrite_43, Babushka_40, AdoptaAdorbs_42, Renna12_42, KHumphrey_43
- Track 13 : Euratis_34
- Track 14 : Samora_35
- Track 15 : Vash_33
- Track 16 : Lilbooboo_33
- Track 17 : Heather_36
- Track 18 : Sebastisaurus_35
- Track 19 : RemusLoopin_35
- Track 20 : Ali17_3
- Track 21 : Hans_7
- Track 22 : Camerico_39
- Track 23 : ByChance_64, ShowerHandel_74
- Track 24 : Scottish_69, KingMidas_70, Sassafras_72, Inventum_69
- Track 25 : Imara_5
- Track 26 : Wogge42_5
- Track 27 : Vagabond_5
- Track 28 : Bora_5
- Track 29 : KingPhillip3_5, Murai_5

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

The start number called the most often in the published annotations is 28, it was called in 17 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alma_82, Ayanochan_82, Beemo_84, Catalina_86, Conquerage_82, EdogawaKiddo_82, Eidsmoe_82, EmyBug_81, Fayely_82, Hanray_82, Halex_82, HortumSL17_85, Jiawan_81, Lilleskat_81, Myxus_84, Onglai_82, Phaeder_84, Phonnegut_84, Pioneer_84, Qobbit_82, Rebeuca_79, RyeScarlet_85, Sachima_80, Scherzo_82, Tubs_84, Twister_78,

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

- ByChance_64, Inventum_69, KingMidas_70, RemusLoopin_35, Sassafras_72, Scottish_69, ShowerHandel_74,

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

- AdoptaAdorbs_42, Ali17_3, Amphitrite_43, Babushka_40, Bora_5, Camara_43, Camerico_39, Chupacabra_75, DontArgue_73, DustyMartin_80, EagleEye_88, Eaglepride_81, Euratis_34, Glotell_44, Hans_7, Heather_36, Imara_5, KHumphrey_43, KingPhillip3_5, Lilbooboo_33, Lucyedi_87, Murai_5, PackMan_83, PainterBoy_86, PeaceMeal1_75, Phlei_63, Poompha_75, Renna12_42, Rowdy_80, Samora_35, Sebastisaurus_35, Severus_76, Shapes_80, Vagabond_5, Vash_33, Wogge42_5,

Summary by start number:

Start 23:

- Found in 6 of 69 (8.7%) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Vagabond_5 (O),

Start 28:

- Found in 33 of 69 (47.8%) of genes in pham
- Manual Annotations of this start: 17 of 49
- Called 78.8% of time when present
- Phage (with cluster) where this start called: Alma_82 (A9), Ayanochan_82 (A9), Beemo_84 (A9), Catalina_86 (A9), Conquerage_82 (A9), EdogawaKiddo_82 (A9), Eidsmoe_82 (A9), EmyBug_81 (A9), Fayely_82 (A9), Hanray_82 (A9), Halex_82 (A9), HortumSL17_85 (A9), Jiawan_81 (A9), Lilleskat_81 (A9), Myxus_84 (A9), Onglai_82 (A9), Phaeder_84 (A9), Phonnegut_84 (A9), Pioneer_84 (A9), Qobbit_82 (A9), Rebeuca_79 (A10), RyeScarlet_85 (A9), Sachima_80 (A9), Scherzo_82 (A9), Tubs_84 (A9), Twister_78 (A10),

Start 29:

- Found in 13 of 69 (18.8%) of genes in pham
- Manual Annotations of this start: 8 of 49
- Called 69.2% of time when present
- Phage (with cluster) where this start called: Bora_5 (O), Euratis_34 (BB1), Heather_36 (BB2), Imara_5 (O), Lilbooboo_33 (BB1), RemusLoopin_35 (BB2), Samora_35 (BB1), Sebastisaurus_35 (BB2), Vash_33 (BB1),

Start 30:

- Found in 14 of 69 (20.3%) of genes in pham
- Manual Annotations of this start: 2 of 49
- Called 35.7% of time when present
- Phage (with cluster) where this start called: Camerico_39 (DF4), KingPhillip3_5 (O), Murai_5 (O), Phlei_63 (A13), Wogge42_5 (O),

Start 31:

- Found in 1 of 69 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hans_7 (DE2),

Start 32:

- Found in 7 of 69 (10.1%) of genes in pham
- Manual Annotations of this start: 4 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AdoptaAdorbs_42 (AS3), Amphitrite_43 (AS3), Babushka_40 (AS3), Camara_43 (AS3), Glotell_44 (AS3), KHumphrey_43 (AS3), Renna12_42 (AS3),

Start 33:

- Found in 1 of 69 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PackMan_83 (A9),

Start 35:

- Found in 14 of 69 (20.3%) of genes in pham
- Manual Annotations of this start: 8 of 49
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Chupacabra_75 (A10), DontArgue_73 (A10), DustyMartin_80 (A10), EagleEye_88 (A16), Eaglepride_81 (A10), Lucyedi_87 (A16), PainterBoy_86 (A16), PeaceMeal1_75 (A10), Poompha_75 (A10), Rowdy_80 (A10), Severus_76 (A10), Shapes_80 (A10),

Start 38:

- Found in 1 of 69 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ali17_3 (DE2),

Start 41:

- Found in 6 of 69 (8.7%) of genes in pham
- Manual Annotations of this start: 6 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ByChance_64 (F1), Inventum_69 (F1), KingMidas_70 (F1), Sassafras_72 (F1), Scottish_69 (F1), ShowerHandel_74 (F1),

Summary by clusters:

There are 11 clusters represented in this pham: AS3, F1, A16, A10, A13, DF4, DE2, O, A9, BB2, BB1,

Info for manual annotations of cluster A10:

- Start number 28 was manually annotated 2 times for cluster A10.
- Start number 35 was manually annotated 5 times for cluster A10.

Info for manual annotations of cluster A16:

- Start number 35 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A9:

- Start number 28 was manually annotated 15 times for cluster A9.
- Start number 33 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster AS3:

- Start number 32 was manually annotated 4 times for cluster AS3.

Info for manual annotations of cluster BB1:

- Start number 29 was manually annotated 4 times for cluster BB1.

Info for manual annotations of cluster BB2:

- Start number 29 was manually annotated 3 times for cluster BB2.

Info for manual annotations of cluster DE2:

- Start number 31 was manually annotated 1 time for cluster DE2.
- Start number 38 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DF4:

- Start number 30 was manually annotated 1 time for cluster DF4.

Info for manual annotations of cluster F1:

- Start number 41 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster O:

- Start number 23 was manually annotated 1 time for cluster O.
- Start number 29 was manually annotated 1 time for cluster O.
- Start number 30 was manually annotated 1 time for cluster O.

Gene Information:

Gene: AdoptaAdorbs_42 Start: 27398, Stop: 27865, Start Num: 32

Candidate Starts for AdoptaAdorbs_42:

(11, 27170), (13, 27209), (17, 27236), (21, 27290), (22, 27302), (27, 27335), (Start: 32 @27398 has 4 MA's), (39, 27473), (48, 27563), (49, 27569), (55, 27590), (60, 27641), (68, 27716), (69, 27719), (80, 27803), (81, 27827), (83, 27836), (86, 27848),

Gene: Ali17_3 Start: 3303, Stop: 3692, Start Num: 38

Candidate Starts for Ali17_3:

(Start: 38 @3303 has 1 MA's), (46, 3387), (54, 3414), (68, 3546), (69, 3549), (70, 3552), (79, 3630), (82, 3660),

Gene: Alma_82 Start: 46797, Stop: 46282, Start Num: 28

Candidate Starts for Alma_82:

(12, 46929), (16, 46905), (20, 46851), (21, 46848), (Start: 28 @46797 has 17 MA's), (48, 46590), (55, 46569), (59, 46521), (68, 46443), (69, 46440), (76, 46353),

Gene: Amphitrite_43 Start: 27397, Stop: 27864, Start Num: 32

Candidate Starts for Amphitrite_43:

(11, 27169), (13, 27208), (17, 27235), (21, 27289), (22, 27301), (27, 27334), (Start: 32 @27397 has 4 MA's), (39, 27472), (48, 27562), (49, 27568), (55, 27589), (60, 27640), (68, 27715), (69, 27718), (80, 27802), (81, 27826), (83, 27835), (86, 27847),

Gene: Ayanochan_82 Start: 46580, Stop: 46065, Start Num: 28

Candidate Starts for Ayanochan_82:

(12, 46712), (16, 46688), (20, 46634), (21, 46631), (Start: 28 @46580 has 17 MA's), (48, 46373), (55, 46352), (59, 46304), (68, 46226), (69, 46223), (76, 46136),

Gene: Babushka_40 Start: 27331, Stop: 27798, Start Num: 32

Candidate Starts for Babushka_40:

(11, 27103), (13, 27142), (17, 27169), (21, 27223), (22, 27235), (27, 27268), (Start: 32 @27331 has 4 MA's), (39, 27406), (48, 27496), (49, 27502), (55, 27523), (60, 27574), (68, 27649), (69, 27652), (80, 27736), (81, 27760), (83, 27769), (86, 27781),

Gene: Beemo_84 Start: 46790, Stop: 46275, Start Num: 28

Candidate Starts for Beemo_84:

(12, 46922), (16, 46898), (21, 46841), (Start: 28 @46790 has 17 MA's), (48, 46583), (55, 46562), (59, 46514), (68, 46436), (69, 46433), (76, 46346),

Gene: Bora_5 Start: 1666, Stop: 1286, Start Num: 29

Candidate Starts for Bora_5:

(11, 1849), (21, 1732), (Start: 23 @1717 has 1 MA's), (Start: 29 @1666 has 8 MA's), (Start: 30 @1663 has 2 MA's), (49, 1555), (51, 1546), (68, 1417), (69, 1414), (79, 1339), (83, 1303),

Gene: ByChance_64 Start: 42129, Stop: 42512, Start Num: 41

Candidate Starts for ByChance_64:

(11, 41784), (15, 41841), (18, 41865), (19, 41883), (20, 41898), (24, 41919), (Start: 28 @41952 has 17 MA's), (Start: 30 @41970 has 2 MA's), (Start: 41 @42129 has 6 MA's), (59, 42291), (68, 42369), (69, 42372), (72, 42393), (74, 42402), (76, 42429), (81, 42477), (87, 42501),

Gene: Camara_43 Start: 27400, Stop: 27867, Start Num: 32

Candidate Starts for Camara_43:

(11, 27172), (13, 27211), (17, 27238), (21, 27292), (22, 27304), (27, 27337), (Start: 32 @27400 has 4 MA's), (39, 27475), (48, 27565), (49, 27571), (55, 27592), (60, 27643), (68, 27718), (69, 27721), (80, 27805), (81, 27829), (83, 27838), (86, 27850),

Gene: Camerico_39 Start: 42850, Stop: 43254, Start Num: 30

Candidate Starts for Camerico_39:

(9, 42643), (26, 42814), (Start: 30 @42850 has 2 MA's), (42, 42979), (47, 43048), (52, 43072), (53, 43075), (60, 43135), (65, 43156),

Gene: Catalina_86 Start: 46900, Stop: 46385, Start Num: 28

Candidate Starts for Catalina_86:

(12, 47032), (16, 47008), (21, 46951), (Start: 28 @46900 has 17 MA's), (48, 46693), (55, 46672), (59, 46624), (68, 46546), (69, 46543), (76, 46456),

Gene: Chupacabra_75 Start: 46471, Stop: 46052, Start Num: 35

Candidate Starts for Chupacabra_75:

(12, 46687), (16, 46663), (21, 46606), (Start: 35 @46471 has 8 MA's), (59, 46282), (68, 46204), (69, 46201), (74, 46168), (77, 46114),

Gene: Conquerage_82 Start: 46566, Stop: 46051, Start Num: 28

Candidate Starts for Conquerage_82:

(12, 46698), (16, 46674), (20, 46620), (21, 46617), (Start: 28 @46566 has 17 MA's), (48, 46359), (55, 46338), (59, 46290), (68, 46212), (69, 46209), (76, 46122),

Gene: DontArgue_73 Start: 45331, Stop: 44912, Start Num: 35

Candidate Starts for DontArgue_73:

(12, 45547), (16, 45523), (21, 45466), (Start: 35 @45331 has 8 MA's), (68, 45064), (69, 45061), (77, 44974),

Gene: DustyMartin_80 Start: 46614, Stop: 46195, Start Num: 35

Candidate Starts for DustyMartin_80:

(12, 46830), (16, 46806), (21, 46749), (Start: 35 @46614 has 8 MA's), (68, 46347), (69, 46344), (72, 46323), (77, 46257),

Gene: EagleEye_88 Start: 48605, Stop: 48168, Start Num: 35

Candidate Starts for EagleEye_88:

(12, 48824), (16, 48800), (20, 48746), (21, 48743), (Start: 35 @48605 has 8 MA's), (48, 48482), (55, 48461), (68, 48335), (73, 48302), (77, 48233), (78, 48230), (81, 48191),

Gene: Eaglepride_81 Start: 46551, Stop: 46135, Start Num: 35

Candidate Starts for Eaglepride_81:

(12, 46767), (16, 46743), (21, 46686), (Start: 35 @46551 has 8 MA's), (59, 46362), (68, 46284), (69, 46281), (73, 46251), (77, 46197),

Gene: EdogawaKiddo_82 Start: 46868, Stop: 46353, Start Num: 28

Candidate Starts for EdogawaKiddo_82:

(12, 47000), (16, 46976), (21, 46919), (Start: 28 @46868 has 17 MA's), (48, 46661), (55, 46640), (59, 46592), (68, 46514), (69, 46511), (76, 46424),

Gene: Eidsmoe_82 Start: 46558, Stop: 46043, Start Num: 28

Candidate Starts for Eidsmoe_82:

(12, 46690), (16, 46666), (20, 46612), (21, 46609), (Start: 28 @46558 has 17 MA's), (48, 46351), (55, 46330), (59, 46282), (68, 46204), (69, 46201), (76, 46114),

Gene: EmyBug_81 Start: 46560, Stop: 46045, Start Num: 28

Candidate Starts for EmyBug_81:

(12, 46692), (16, 46668), (20, 46614), (21, 46611), (Start: 28 @46560 has 17 MA's), (48, 46353), (55, 46332), (59, 46284), (68, 46206), (69, 46203), (76, 46116),

Gene: Euratis_34 Start: 26257, Stop: 26847, Start Num: 29

Candidate Starts for Euratis_34:

(4, 25936), (7, 26032), (8, 26047), (14, 26125), (20, 26185), (26, 26221), (Start: 29 @26257 has 8 MA's), (36, 26392), (43, 26482), (50, 26530), (57, 26587), (66, 26635), (67, 26656), (68, 26686), (69, 26689), (71, 26695), (72, 26710), (79, 26767), (83, 26803), (84, 26815), (88, 26836),

Gene: Fayely_82 Start: 46533, Stop: 46018, Start Num: 28

Candidate Starts for Fayely_82:

(12, 46665), (16, 46641), (21, 46584), (Start: 28 @46533 has 17 MA's), (48, 46326), (55, 46305), (59, 46257), (68, 46179), (69, 46176), (76, 46089),

Gene: Glotell_44 Start: 27556, Stop: 28023, Start Num: 32

Candidate Starts for Glotell_44:

(11, 27328), (13, 27367), (17, 27394), (21, 27448), (22, 27460), (27, 27493), (Start: 32 @27556 has 4 MA's), (39, 27631), (48, 27721), (49, 27727), (55, 27748), (60, 27799), (68, 27874), (69, 27877), (80, 27961), (81, 27985), (83, 27994), (86, 28006),

Gene: Hanray_82 Start: 46844, Stop: 46329, Start Num: 28

Candidate Starts for Hanray_82:

(12, 46976), (16, 46952), (21, 46895), (Start: 28 @46844 has 17 MA's), (48, 46637), (55, 46616), (59, 46568), (68, 46490), (69, 46487), (76, 46400),

Gene: Hans_7 Start: 4390, Stop: 4869, Start Num: 31

Candidate Starts for Hans_7:

(Start: 31 @4390 has 1 MA's), (40, 4486), (46, 4564), (54, 4591), (68, 4723), (69, 4726), (70, 4729), (79, 4807), (82, 4837),

Gene: Heather_36 Start: 27272, Stop: 27856, Start Num: 29

Candidate Starts for Heather_36:

(3, 26909), (6, 27035), (7, 27047), (8, 27062), (10, 27071), (20, 27200), (Start: 29 @27272 has 8 MA's), (45, 27518), (50, 27545), (69, 27704), (71, 27710), (72, 27725), (79, 27782), (83, 27818), (84, 27830),

Gene: Holec_82 Start: 46860, Stop: 46345, Start Num: 28

Candidate Starts for Holec_82:

(12, 46992), (16, 46968), (21, 46911), (Start: 28 @46860 has 17 MA's), (48, 46653), (55, 46632), (59, 46584), (68, 46506), (69, 46503), (76, 46416),

Gene: HortumSL17_85 Start: 46898, Stop: 46383, Start Num: 28

Candidate Starts for HortumSL17_85:

(12, 47030), (16, 47006), (21, 46949), (Start: 28 @46898 has 17 MA's), (48, 46691), (55, 46670), (59, 46622), (68, 46544), (69, 46541), (76, 46454),

Gene: Imara_5 Start: 1667, Stop: 1287, Start Num: 29

Candidate Starts for Imara_5:

(11, 1850), (21, 1733), (Start: 23 @1718 has 1 MA's), (Start: 29 @1667 has 8 MA's), (Start: 30 @1664 has 2 MA's), (49, 1556), (51, 1547), (68, 1418), (69, 1415), (75, 1379), (79, 1340), (83, 1304),

Gene: Inventum_69 Start: 45166, Stop: 45558, Start Num: 41

Candidate Starts for Inventum_69:

(11, 44821), (15, 44878), (18, 44902), (19, 44920), (20, 44935), (24, 44956), (Start: 28 @44989 has 17 MA's), (Start: 30 @45007 has 2 MA's), (Start: 41 @45166 has 6 MA's), (59, 45328), (68, 45406), (69, 45409), (72, 45430), (74, 45439), (76, 45466), (87, 45547),

Gene: Jiawan_81 Start: 46876, Stop: 46361, Start Num: 28

Candidate Starts for Jiawan_81:

(12, 47008), (16, 46984), (21, 46927), (Start: 28 @46876 has 17 MA's), (48, 46669), (55, 46648), (59, 46600), (68, 46522), (69, 46519), (76, 46432),

Gene: KHumphrey_43 Start: 27399, Stop: 27866, Start Num: 32

Candidate Starts for KHumphrey_43:

(11, 27171), (13, 27210), (17, 27237), (21, 27291), (22, 27303), (27, 27336), (Start: 32 @27399 has 4 MA's), (39, 27474), (48, 27564), (49, 27570), (55, 27591), (60, 27642), (68, 27717), (69, 27720), (80, 27804), (81, 27828), (83, 27837), (86, 27849),

Gene: KingMidas_70 Start: 45569, Stop: 45961, Start Num: 41

Candidate Starts for KingMidas_70:

(11, 45224), (15, 45281), (18, 45305), (19, 45323), (20, 45338), (24, 45359), (Start: 28 @45392 has 17 MA's), (Start: 30 @45410 has 2 MA's), (Start: 41 @45569 has 6 MA's), (59, 45731), (68, 45809), (69, 45812), (72, 45833), (74, 45842), (76, 45869), (87, 45950),

Gene: KingPhillip3_5 Start: 1579, Stop: 1196, Start Num: 30

Candidate Starts for KingPhillip3_5:

(11, 1765), (21, 1648), (Start: 23 @1633 has 1 MA's), (Start: 29 @1582 has 8 MA's), (Start: 30 @1579 has 2 MA's), (49, 1465), (51, 1456), (56, 1432), (68, 1327), (69, 1324), (75, 1288), (79, 1249), (83, 1213),

Gene: Lilbooboo_33 Start: 26272, Stop: 26859, Start Num: 29

Candidate Starts for Lilbooboo_33:

(1, 25882), (2, 25885), (4, 25951), (5, 25963), (8, 26062), (20, 26200), (Start: 29 @26272 has 8 MA's), (34, 26374), (36, 26407), (50, 26545), (57, 26602), (62, 26629), (64, 26647), (67, 26671), (69, 26704), (74, 26734), (83, 26818), (84, 26830),

Gene: Lilleskat_81 Start: 46857, Stop: 46342, Start Num: 28

Candidate Starts for Lilleskat_81:

(12, 46989), (16, 46965), (21, 46908), (Start: 28 @46857 has 17 MA's), (48, 46650), (55, 46629), (59, 46581), (68, 46503), (69, 46500), (76, 46413),

Gene: Lucyedi_87 Start: 48804, Stop: 48367, Start Num: 35

Candidate Starts for Lucyedi_87:

(12, 49023), (16, 48999), (20, 48945), (21, 48942), (Start: 35 @48804 has 8 MA's), (48, 48681), (55, 48660), (68, 48534), (73, 48501), (77, 48432), (78, 48429), (81, 48390),

Gene: Murai_5 Start: 1530, Stop: 1147, Start Num: 30

Candidate Starts for Murai_5:

(11, 1716), (21, 1599), (Start: 23 @1584 has 1 MA's), (Start: 29 @1533 has 8 MA's), (Start: 30 @1530 has 2 MA's), (49, 1416), (51, 1407), (56, 1383), (68, 1278), (69, 1275), (75, 1239), (79, 1200), (83, 1164),

Gene: Myxus_84 Start: 46898, Stop: 46383, Start Num: 28

Candidate Starts for Myxus_84:

(12, 47030), (16, 47006), (21, 46949), (Start: 28 @46898 has 17 MA's), (48, 46691), (55, 46670), (59, 46622), (68, 46544), (69, 46541), (76, 46454),

Gene: Onglai_82 Start: 45048, Stop: 44533, Start Num: 28

Candidate Starts for Onglai_82:

(12, 45180), (16, 45156), (21, 45099), (Start: 28 @45048 has 17 MA's), (48, 44841), (55, 44820), (59, 44772), (68, 44694), (69, 44691), (76, 44604),

Gene: PackMan_83 Start: 46722, Stop: 46258, Start Num: 33

Candidate Starts for PackMan_83:

(Start: 33 @46722 has 1 MA's), (37, 46662), (48, 46566), (55, 46545), (59, 46497), (68, 46419), (69, 46416), (76, 46329),

Gene: PainterBoy_86 Start: 48515, Stop: 48078, Start Num: 35

Candidate Starts for PainterBoy_86:

(12, 48734), (16, 48710), (20, 48656), (21, 48653), (Start: 35 @48515 has 8 MA's), (48, 48392), (55, 48371), (68, 48245), (73, 48212), (77, 48143), (78, 48140), (81, 48101),

Gene: PeaceMeal1_75 Start: 45639, Stop: 45220, Start Num: 35

Candidate Starts for PeaceMeal1_75:

(12, 45855), (16, 45831), (21, 45774), (Start: 35 @45639 has 8 MA's), (59, 45450), (68, 45372), (69, 45369), (72, 45348), (74, 45336), (77, 45282),

Gene: Phaeder_84 Start: 46773, Stop: 46258, Start Num: 28

Candidate Starts for Phaeder_84:

(12, 46905), (16, 46881), (21, 46824), (Start: 28 @46773 has 17 MA's), (48, 46566), (55, 46545), (59, 46497), (68, 46419), (69, 46416), (76, 46329),

Gene: Phlei_63 Start: 43732, Stop: 43292, Start Num: 30

Candidate Starts for Phlei_63:

(12, 43876), (16, 43858), (20, 43804), (25, 43771), (Start: 30 @43732 has 2 MA's), (55, 43588), (59, 43540), (61, 43534), (68, 43462), (69, 43459), (76, 43378), (77, 43372), (85, 43312),

Gene: Phonnegut_84 Start: 46789, Stop: 46274, Start Num: 28

Candidate Starts for Phonnegut_84:

(12, 46921), (16, 46897), (21, 46840), (Start: 28 @46789 has 17 MA's), (48, 46582), (55, 46561), (59, 46513), (68, 46435), (69, 46432), (76, 46345),

Gene: Pioneer_84 Start: 46789, Stop: 46274, Start Num: 28

Candidate Starts for Pioneer_84:

(12, 46921), (16, 46897), (21, 46840), (Start: 28 @46789 has 17 MA's), (48, 46582), (55, 46561), (59, 46513), (68, 46435), (69, 46432), (76, 46345),

Gene: Poompha_75 Start: 45637, Stop: 45218, Start Num: 35

Candidate Starts for Poompha_75:

(12, 45853), (16, 45829), (21, 45772), (Start: 35 @45637 has 8 MA's), (59, 45448), (68, 45370), (69, 45367), (72, 45346), (74, 45334), (77, 45280),

Gene: Qobbit_82 Start: 46523, Stop: 46008, Start Num: 28

Candidate Starts for Qobbit_82:

(12, 46655), (16, 46631), (20, 46577), (21, 46574), (Start: 28 @46523 has 17 MA's), (48, 46316), (55, 46295), (59, 46247), (68, 46169), (69, 46166), (76, 46079),

Gene: Rebeuca_79 Start: 46991, Stop: 46488, Start Num: 28

Candidate Starts for Rebeuca_79:

(12, 47123), (16, 47099), (21, 47042), (Start: 28 @46991 has 17 MA's), (Start: 35 @46907 has 8 MA's), (59, 46718), (68, 46640), (69, 46637), (74, 46604), (77, 46550),

Gene: RemusLoopin_35 Start: 27467, Stop: 28051, Start Num: 29

Candidate Starts for RemusLoopin_35:

(6, 27230), (7, 27242), (8, 27257), (20, 27395), (Start: 28 @27449 has 17 MA's), (Start: 29 @27467 has 8 MA's), (34, 27569), (45, 27713), (50, 27740), (57, 27797), (69, 27899), (72, 27920), (79, 27977), (83, 28013), (84, 28025),

Gene: Renna12_42 Start: 27456, Stop: 27923, Start Num: 32

Candidate Starts for Renna12_42:

(11, 27228), (13, 27267), (17, 27294), (21, 27348), (22, 27360), (27, 27393), (Start: 32 @27456 has 4 MA's), (39, 27531), (48, 27621), (49, 27627), (55, 27648), (60, 27699), (68, 27774), (69, 27777), (80, 27861), (81, 27885), (83, 27894), (86, 27906),

Gene: Rowdy_80 Start: 46614, Stop: 46195, Start Num: 35

Candidate Starts for Rowdy_80:

(12, 46830), (16, 46806), (21, 46749), (Start: 35 @46614 has 8 MA's), (68, 46347), (69, 46344), (72, 46323), (77, 46257),

Gene: RyeScarlet_85 Start: 46764, Stop: 46249, Start Num: 28

Candidate Starts for RyeScarlet_85:

(12, 46896), (16, 46872), (21, 46815), (Start: 28 @46764 has 17 MA's), (48, 46557), (55, 46536), (59, 46488), (68, 46410), (69, 46407), (76, 46320),

Gene: Sachima_80 Start: 46801, Stop: 46286, Start Num: 28

Candidate Starts for Sachima_80:

(12, 46933), (16, 46909), (21, 46852), (Start: 28 @46801 has 17 MA's), (48, 46594), (55, 46573), (59, 46525), (68, 46447), (69, 46444), (76, 46357),

Gene: Samora_35 Start: 26872, Stop: 27459, Start Num: 29

Candidate Starts for Samora_35:

(4, 26551), (5, 26563), (8, 26662), (20, 26800), (Start: 29 @26872 has 8 MA's), (34, 26974), (44, 27109), (46, 27127), (50, 27145), (63, 27241), (69, 27304), (74, 27334), (83, 27418),

Gene: Sassafras_72 Start: 45165, Stop: 45557, Start Num: 41

Candidate Starts for Sassafras_72:

(11, 44820), (15, 44877), (18, 44901), (19, 44919), (20, 44934), (24, 44955), (Start: 28 @44988 has 17 MA's), (Start: 30 @45006 has 2 MA's), (Start: 41 @45165 has 6 MA's), (59, 45327), (68, 45405), (69, 45408), (72, 45429), (74, 45438), (76, 45465), (87, 45546),

Gene: Scherzo_82 Start: 46821, Stop: 46306, Start Num: 28

Candidate Starts for Scherzo_82:

(12, 46953), (16, 46929), (21, 46872), (Start: 28 @46821 has 17 MA's), (48, 46614), (55, 46593), (59, 46545), (68, 46467), (69, 46464), (76, 46377),

Gene: Scottish_69 Start: 44824, Stop: 45216, Start Num: 41

Candidate Starts for Scottish_69:

(11, 44479), (15, 44536), (18, 44560), (19, 44578), (20, 44593), (24, 44614), (Start: 28 @44647 has 17 MA's), (Start: 30 @44665 has 2 MA's), (Start: 41 @44824 has 6 MA's), (59, 44986), (68, 45064), (69, 45067), (72, 45088), (74, 45097), (76, 45124), (87, 45205),

Gene: Sebastisaurus_35 Start: 27189, Stop: 27773, Start Num: 29

Candidate Starts for Sebastisaurus_35:

(6, 26952), (7, 26964), (8, 26979), (20, 27117), (26, 27153), (Start: 29 @27189 has 8 MA's), (34, 27291), (36, 27324), (45, 27435), (50, 27462), (57, 27519), (58, 27534), (64, 27564), (69, 27621), (72, 27642), (83, 27735), (84, 27747),

Gene: Severus_76 Start: 45637, Stop: 45218, Start Num: 35

Candidate Starts for Severus_76:

(12, 45853), (16, 45829), (21, 45772), (Start: 35 @45637 has 8 MA's), (59, 45448), (68, 45370), (69, 45367), (72, 45346), (74, 45334), (77, 45280),

Gene: Shapes_80 Start: 46614, Stop: 46195, Start Num: 35

Candidate Starts for Shapes_80:

(12, 46830), (16, 46806), (21, 46749), (Start: 35 @46614 has 8 MA's), (68, 46347), (69, 46344), (72, 46323), (77, 46257),

Gene: ShowerHandel_74 Start: 46069, Stop: 46452, Start Num: 41

Candidate Starts for ShowerHandel_74:

(11, 45724), (15, 45781), (18, 45805), (19, 45823), (20, 45838), (24, 45859), (Start: 28 @45892 has 17 MA's), (Start: 30 @45910 has 2 MA's), (Start: 41 @46069 has 6 MA's), (59, 46231), (68, 46309), (69, 46312), (72, 46333), (74, 46342), (76, 46369), (81, 46417), (87, 46441),

Gene: Tubs_84 Start: 46773, Stop: 46258, Start Num: 28

Candidate Starts for Tubs_84:

(12, 46905), (16, 46881), (21, 46824), (Start: 28 @46773 has 17 MA's), (48, 46566), (55, 46545), (59, 46497), (68, 46419), (69, 46416), (76, 46329),

Gene: Twister_78 Start: 46549, Stop: 46046, Start Num: 28

Candidate Starts for Twister_78:

(12, 46681), (16, 46657), (21, 46600), (Start: 28 @46549 has 17 MA's), (Start: 35 @46465 has 8 MA's), (59, 46276), (68, 46198), (69, 46195), (74, 46162), (77, 46108),

Gene: Vagabond_5 Start: 1719, Stop: 1288, Start Num: 23

Candidate Starts for Vagabond_5:

(11, 1851), (21, 1734), (Start: 23 @1719 has 1 MA's), (Start: 29 @1668 has 8 MA's), (Start: 30 @1665 has 2 MA's), (49, 1557), (51, 1548), (68, 1419), (69, 1416), (75, 1380), (79, 1341), (83, 1305),

Gene: Vash_33 Start: 26115, Stop: 26702, Start Num: 29

Candidate Starts for Vash_33:

(1, 25725), (3, 25752), (4, 25794), (8, 25905), (20, 26043), (Start: 29 @26115 has 8 MA's), (57, 26445), (64, 26490), (67, 26514), (68, 26544), (69, 26547), (74, 26577), (83, 26661), (84, 26673),

Gene: Wogge42_5 Start: 1668, Stop: 1291, Start Num: 30

Candidate Starts for Wogge42_5:

(11, 1854), (21, 1737), (Start: 23 @1722 has 1 MA's), (Start: 29 @1671 has 8 MA's), (Start: 30 @1668 has 2 MA's), (49, 1560), (51, 1551), (68, 1422), (69, 1419), (75, 1383), (79, 1344), (83, 1308),