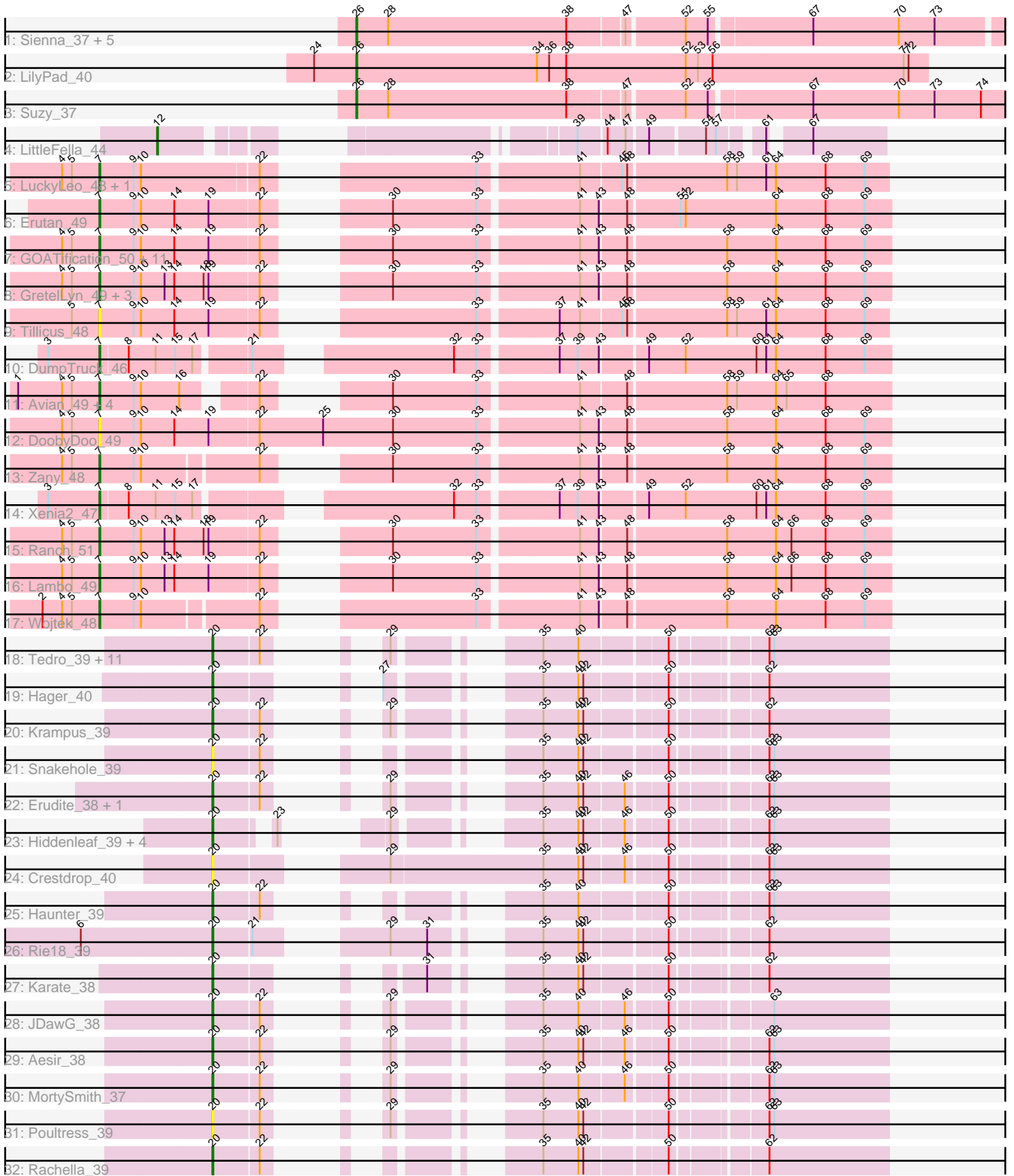


Pham 159169



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 159169 Report

This analysis was run 04/28/24 on database version 559.

Pham number 159169 has 72 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Sienna_37, Djokovic_37, BiteSize_37, Terapin_38, Beyonccage_37, Madi_37
- Track 2 : LilyPad_40
- Track 3 : Suzy_37
- Track 4 : LittleFella_44
- Track 5 : LuckyLeo_48, Apeppi_46
- Track 6 : Erutan_49
- Track 7 : GOATification_50, Jalebi_49, Patos_52, NorManre_52, ParvusTarda_49, Fulcrum_50, BirthdayBoy_52, Gibbin_51, Yikes_51, Sampudon_50, MoiGyank_57, Benjamin420_52
- Track 8 : Gretellyn_49, OtterstedtS21_49, Sadboi_50, Lila22_53
- Track 9 : Tillicus_48
- Track 10 : DumpTruck_46
- Track 11 : Avian_49, Rumi_50, Alyssamiracle_52, NovaSharks_51, Genamy16_52
- Track 12 : DoobyDoo_49
- Track 13 : Zany_48
- Track 14 : Xenia2_47
- Track 15 : Ranch_51
- Track 16 : Lambo_49
- Track 17 : Wojtek_48
- Track 18 : Tedro_39, AnnaSerena_39, Cybele_39, CoolCookie_44, PhunaPhoke_39, NarutoRun_39, Pharpay_39, Anakin_39, Neptune_39, Gilda_39, OverHedge_40, Potty_39
- Track 19 : Hager_40
- Track 20 : Krampus_39
- Track 21 : Snakehole_39
- Track 22 : Erudite_38, Dauntless_39
- Track 23 : Hiddenleaf_39, JingleBells_39, FreddieHg_39, Chivey_39, DannyDe_39
- Track 24 : Crestdrop_40
- Track 25 : Haunter_39
- Track 26 : Rie18_39
- Track 27 : Karate_38
- Track 28 : JDawG_38
- Track 29 : Aesir_38
- Track 30 : MortySmith_37
- Track 31 : Poultruss_39
- Track 32 : Rachella_39

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

The start number called the most often in the published annotations is 7, it was called in 25 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alyssamiracle_52, Apeppi_46, Avian_49, BirthdayBoy_52, DoobyDoo_49, DumpTruck_46, Erutan_49, Fulcrum_50, GOATification_50, Genamy16_52, Gibbin_51, GretelLyn_49, Jalebi_49, Lambo_49, Lila22_53, LuckyLeo_48, MoiGyank_57, NorManre_52, NovaSharks_51, OtterstedtS21_49, ParvusTarda_49, Patos_52, Penjamin420_52, Ranch_51, Rumi_50, Sadboi_50, Sampudon_50, Tillicus_48, Wojtek_48, Xenia2_47, Yikes_51, Zany_48,

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

-

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

- Aesir_38, Anakin_39, AnnaSerena_39, Beyoncage_37, BiteSize_37, Chivey_39, CoolCookie_44, Crestdrop_40, Cybele_39, DannyDe_39, Dauntless_39, Djokovic_37, Erudite_38, FreddieHg_39, Gilda_39, Hager_40, Haunter_39, Hiddenleaf_39, JDawG_38, JingleBells_39, Karate_38, Krampus_39, LilyPad_40, LittleFella_44, Madi_37, MortySmith_37, NarutoRun_39, Neptune_39, OverHedge_40, Pharpay_39, PhunaPhoke_39, Potty_39, Poultruss_39, Rachella_39, Rie18_39, Sienna_37, Snakehole_39, Suzy_37, Tedro_39, Terapin_38,

Summary by start number:

Start 7:

- Found in 32 of 72 (44.4%) of genes in pham
- Manual Annotations of this start: 25 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alyssamiracle_52 (DV), Apeppi_46 (DV), Avian_49 (DV), BirthdayBoy_52 (DV), DoobyDoo_49 (DV), DumpTruck_46 (DV), Erutan_49 (DV), Fulcrum_50 (DV), GOATification_50 (DV), Genamy16_52 (DV), Gibbin_51 (DV), GretelLyn_49 (DV), Jalebi_49 (DV), Lambo_49 (DV), Lila22_53 (DV), LuckyLeo_48 (DV), MoiGyank_57 (DV), NorManre_52 (DV), NovaSharks_51 (DV), OtterstedtS21_49 (DV), ParvusTarda_49 (DV), Patos_52 (DV), Penjamin420_52 (DV), Ranch_51 (DV), Rumi_50 (DV), Sadboi_50 (DV), Sampudon_50 (DV), Tillicus_48 (DV), Wojtek_48 (DV), Xenia2_47 (DV), Yikes_51 (DV), Zany_48 (DV),

Start 12:

- Found in 1 of 72 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LittleFella_44 (DG2),

Start 20:

- Found in 31 of 72 (43.1%) of genes in pham

- Manual Annotations of this start: 23 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir_38 (EF), Anakin_39 (EF), AnnaSerena_39 (EF), Chivey_39 (EF), CoolCookie_44 (EF), Crestdrop_40 (EF), Cybele_39 (EF), DannyDe_39 (EF), Dauntless_39 (EF), Erudite_38 (EF), FreddieHg_39 (EF), Gilda_39 (EF), Hager_40 (EF), Haunter_39 (EF), Hiddenleaf_39 (EF), JDawG_38 (EF), JingleBells_39 (EF), Karate_38 (EF), Krampus_39 (EF), MortySmith_37 (EF), NarutoRun_39 (EF), Neptune_39 (EF), OverHedge_40 (EF), Pharpay_39 (EF), PhunaPhoke_39 (EF), Potty_39 (EF), Poultruss_39 (EF), Rachella_39 (EF), Rie18_39 (EF), Snakehole_39 (EF), Tedro_39 (EF),

Start 26:

- Found in 8 of 72 (11.1%) of genes in pham
- Manual Annotations of this start: 8 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beyoncage_37 (DG1), BiteSize_37 (DG1), Djokovic_37 (DG1), LilyPad_40 (DG1), Madi_37 (DG1), Sienna_37 (DG1), Suzy_37 (DG1), Terapin_38 (DG1),

Summary by clusters:

There are 4 clusters represented in this pham: DV, DG2, DG1, EF,

Info for manual annotations of cluster DG1:

- Start number 26 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 12 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 7 was manually annotated 25 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 20 was manually annotated 23 times for cluster EF.

Gene Information:

Gene: Aesir_38 Start: 25004, Stop: 25594, Start Num: 20

Candidate Starts for Aesir_38:

(Start: 20 @25004 has 23 MA's), (22, 25058), (29, 25094), (35, 25208), (40, 25250), (42, 25256), (46, 25301), (50, 25346), (62, 25448), (63, 25454),

Gene: Alyssamiracle_52 Start: 36033, Stop: 36866, Start Num: 7

Candidate Starts for Alyssamiracle_52:

(1, 35934), (4, 35988), (5, 36000), (Start: 7 @36033 has 25 MA's), (9, 36075), (10, 36084), (16, 36129), (22, 36198), (30, 36282), (33, 36384), (41, 36498), (48, 36549), (58, 36666), (59, 36678), (64, 36726), (65, 36738), (68, 36786),

Gene: Anakin_39 Start: 25324, Stop: 25914, Start Num: 20

Candidate Starts for Anakin_39:

(Start: 20 @25324 has 23 MA's), (22, 25378), (29, 25414), (35, 25528), (40, 25570), (50, 25666), (62, 25768), (63, 25774),

Gene: AnnaSerena_39 Start: 25359, Stop: 25949, Start Num: 20

Candidate Starts for AnnaSerena_39:

(Start: 20 @25359 has 23 MA's), (22, 25413), (29, 25449), (35, 25563), (40, 25605), (50, 25701), (62, 25803), (63, 25809),

Gene: Apeppi_46 Start: 36209, Stop: 37057, Start Num: 7

Candidate Starts for Apeppi_46:

(4, 36164), (5, 36176), (Start: 7 @36209 has 25 MA's), (9, 36251), (10, 36260), (22, 36392), (33, 36578), (41, 36692), (45, 36737), (48, 36743), (58, 36860), (59, 36872), (61, 36908), (64, 36920), (68, 36980), (69, 37028),

Gene: Avian_49 Start: 35761, Stop: 36594, Start Num: 7

Candidate Starts for Avian_49:

(1, 35662), (4, 35716), (5, 35728), (Start: 7 @35761 has 25 MA's), (9, 35803), (10, 35812), (16, 35857), (22, 35926), (30, 36010), (33, 36112), (41, 36226), (48, 36277), (58, 36394), (59, 36406), (64, 36454), (65, 36466), (68, 36514),

Gene: Beyoncage_37 Start: 31421, Stop: 32200, Start Num: 26

Candidate Starts for Beyoncage_37:

(Start: 26 @31421 has 8 MA's), (28, 31460), (38, 31679), (47, 31742), (52, 31808), (55, 31835), (67, 31952), (70, 32057), (73, 32099),

Gene: BirthdayBoy_52 Start: 37410, Stop: 38270, Start Num: 7

Candidate Starts for BirthdayBoy_52:

(4, 37365), (5, 37377), (Start: 7 @37410 has 25 MA's), (9, 37452), (10, 37461), (14, 37500), (19, 37542), (22, 37602), (30, 37686), (33, 37788), (41, 37902), (43, 37923), (48, 37953), (58, 38070), (64, 38130), (68, 38190), (69, 38238),

Gene: BiteSize_37 Start: 31507, Stop: 32286, Start Num: 26

Candidate Starts for BiteSize_37:

(Start: 26 @31507 has 8 MA's), (28, 31546), (38, 31765), (47, 31828), (52, 31894), (55, 31921), (67, 32038), (70, 32143), (73, 32185),

Gene: Chivey_39 Start: 24582, Stop: 25172, Start Num: 20

Candidate Starts for Chivey_39:

(Start: 20 @24582 has 23 MA's), (23, 24636), (29, 24672), (35, 24786), (40, 24828), (42, 24834), (46, 24879), (50, 24924), (62, 25026), (63, 25032),

Gene: CoolCookie_44 Start: 25354, Stop: 25944, Start Num: 20

Candidate Starts for CoolCookie_44:

(Start: 20 @25354 has 23 MA's), (22, 25408), (29, 25444), (35, 25558), (40, 25600), (50, 25696), (62, 25798), (63, 25804),

Gene: Crestdrop_40 Start: 24493, Stop: 25206, Start Num: 20

Candidate Starts for Crestdrop_40:

(Start: 20 @24493 has 23 MA's), (29, 24637), (35, 24820), (40, 24862), (42, 24868), (46, 24913), (50, 24958), (62, 25060), (63, 25066),

Gene: Cybele_39 Start: 25324, Stop: 25914, Start Num: 20

Candidate Starts for Cybele_39:

(Start: 20 @25324 has 23 MA's), (22, 25378), (29, 25414), (35, 25528), (40, 25570), (50, 25666), (62, 25768), (63, 25774),

Gene: DannyDe_39 Start: 24588, Stop: 25178, Start Num: 20

Candidate Starts for DannyDe_39:

(Start: 20 @24588 has 23 MA's), (23, 24642), (29, 24678), (35, 24792), (40, 24834), (42, 24840), (46, 24885), (50, 24930), (62, 25032), (63, 25038),

Gene: Dauntless_39 Start: 24910, Stop: 25500, Start Num: 20

Candidate Starts for Dauntless_39:

(Start: 20 @24910 has 23 MA's), (22, 24964), (29, 25000), (35, 25114), (40, 25156), (42, 25162), (46, 25207), (50, 25252), (62, 25354), (63, 25360),

Gene: Djokovic_37 Start: 31420, Stop: 32199, Start Num: 26

Candidate Starts for Djokovic_37:

(Start: 26 @31420 has 8 MA's), (28, 31459), (38, 31678), (47, 31741), (52, 31807), (55, 31834), (67, 31951), (70, 32056), (73, 32098),

Gene: DoobyDoo_49 Start: 35865, Stop: 36803, Start Num: 7

Candidate Starts for DoobyDoo_49:

(4, 35820), (5, 35832), (Start: 7 @35865 has 25 MA's), (9, 35907), (10, 35916), (14, 35955), (19, 35997), (22, 36057), (25, 36135), (30, 36219), (33, 36321), (41, 36435), (43, 36456), (48, 36486), (58, 36603), (64, 36663), (68, 36723), (69, 36771),

Gene: DumpTruck_46 Start: 35046, Stop: 35921, Start Num: 7

Candidate Starts for DumpTruck_46:

(3, 34986), (Start: 7 @35046 has 25 MA's), (8, 35079), (11, 35112), (15, 35136), (17, 35157), (21, 35217), (32, 35412), (33, 35439), (37, 35529), (39, 35550), (43, 35574), (49, 35625), (52, 35670), (60, 35757), (61, 35769), (64, 35781), (68, 35841), (69, 35889),

Gene: Erudite_38 Start: 24910, Stop: 25500, Start Num: 20

Candidate Starts for Erudite_38:

(Start: 20 @24910 has 23 MA's), (22, 24964), (29, 25000), (35, 25114), (40, 25156), (42, 25162), (46, 25207), (50, 25252), (62, 25354), (63, 25360),

Gene: Erutan_49 Start: 36477, Stop: 37337, Start Num: 7

Candidate Starts for Erutan_49:

(Start: 7 @36477 has 25 MA's), (9, 36519), (10, 36528), (14, 36567), (19, 36609), (22, 36669), (30, 36753), (33, 36855), (41, 36969), (43, 36990), (48, 37020), (51, 37080), (52, 37086), (64, 37197), (68, 37257), (69, 37305),

Gene: FreddieHg_39 Start: 24598, Stop: 25188, Start Num: 20

Candidate Starts for FreddieHg_39:

(Start: 20 @24598 has 23 MA's), (23, 24652), (29, 24688), (35, 24802), (40, 24844), (42, 24850), (46, 24895), (50, 24940), (62, 25042), (63, 25048),

Gene: Fulcrum_50 Start: 36704, Stop: 37564, Start Num: 7

Candidate Starts for Fulcrum_50:

(4, 36659), (5, 36671), (Start: 7 @36704 has 25 MA's), (9, 36746), (10, 36755), (14, 36794), (19, 36836), (22, 36896), (30, 36980), (33, 37082), (41, 37196), (43, 37217), (48, 37247), (58, 37364), (64, 37424), (68, 37484), (69, 37532),

Gene: GOATification_50 Start: 36704, Stop: 37564, Start Num: 7

Candidate Starts for GOATification_50:

(4, 36659), (5, 36671), (Start: 7 @36704 has 25 MA's), (9, 36746), (10, 36755), (14, 36794), (19, 36836), (22, 36896), (30, 36980), (33, 37082), (41, 37196), (43, 37217), (48, 37247), (58, 37364), (64, 37424), (68, 37484), (69, 37532),

Gene: Genamy16_52 Start: 36019, Stop: 36852, Start Num: 7

Candidate Starts for Genamy16_52:

(1, 35920), (4, 35974), (5, 35986), (Start: 7 @36019 has 25 MA's), (9, 36061), (10, 36070), (16, 36115), (22, 36184), (30, 36268), (33, 36370), (41, 36484), (48, 36535), (58, 36652), (59, 36664), (64, 36712), (65, 36724), (68, 36772),

Gene: Gibbin_51 Start: 37360, Stop: 38220, Start Num: 7

Candidate Starts for Gibbin_51:

(4, 37315), (5, 37327), (Start: 7 @37360 has 25 MA's), (9, 37402), (10, 37411), (14, 37450), (19, 37492), (22, 37552), (30, 37636), (33, 37738), (41, 37852), (43, 37873), (48, 37903), (58, 38020), (64, 38080), (68, 38140), (69, 38188),

Gene: Gilda_39 Start: 25348, Stop: 25938, Start Num: 20

Candidate Starts for Gilda_39:

(Start: 20 @25348 has 23 MA's), (22, 25402), (29, 25438), (35, 25552), (40, 25594), (50, 25690), (62, 25792), (63, 25798),

Gene: Gretellyn_49 Start: 37434, Stop: 38294, Start Num: 7

Candidate Starts for Gretellyn_49:

(4, 37389), (5, 37401), (Start: 7 @37434 has 25 MA's), (9, 37476), (10, 37485), (13, 37512), (14, 37524), (18, 37560), (19, 37566), (22, 37626), (30, 37710), (33, 37812), (41, 37926), (43, 37947), (48, 37977), (58, 38094), (64, 38154), (68, 38214), (69, 38262),

Gene: Hager_40 Start: 24835, Stop: 25425, Start Num: 20

Candidate Starts for Hager_40:

(Start: 20 @24835 has 23 MA's), (27, 24916), (35, 25039), (40, 25081), (42, 25087), (50, 25177), (62, 25279),

Gene: Haunter_39 Start: 24740, Stop: 25330, Start Num: 20

Candidate Starts for Haunter_39:

(Start: 20 @24740 has 23 MA's), (22, 24794), (35, 24944), (40, 24986), (50, 25082), (62, 25184), (63, 25190),

Gene: Hiddenleaf_39 Start: 24582, Stop: 25172, Start Num: 20

Candidate Starts for Hiddenleaf_39:

(Start: 20 @24582 has 23 MA's), (23, 24636), (29, 24672), (35, 24786), (40, 24828), (42, 24834), (46, 24879), (50, 24924), (62, 25026), (63, 25032),

Gene: JDawG_38 Start: 24999, Stop: 25589, Start Num: 20

Candidate Starts for JDawG_38:

(Start: 20 @24999 has 23 MA's), (22, 25053), (29, 25089), (35, 25203), (40, 25245), (46, 25296), (50, 25341), (63, 25449),

Gene: Jalebi_49 Start: 37779, Stop: 38639, Start Num: 7

Candidate Starts for Jalebi_49:

(4, 37734), (5, 37746), (Start: 7 @37779 has 25 MA's), (9, 37821), (10, 37830), (14, 37869), (19, 37911), (22, 37971), (30, 38055), (33, 38157), (41, 38271), (43, 38292), (48, 38322), (58, 38439), (64, 38499), (68, 38559), (69, 38607),

Gene: JingleBells_39 Start: 24703, Stop: 25293, Start Num: 20

Candidate Starts for JingleBells_39:

(Start: 20 @24703 has 23 MA's), (23, 24757), (29, 24793), (35, 24907), (40, 24949), (42, 24955), (46, 25000), (50, 25045), (62, 25147), (63, 25153),

Gene: Karate_38 Start: 25350, Stop: 25943, Start Num: 20

Candidate Starts for Karate_38:

(Start: 20 @25350 has 23 MA's), (31, 25476), (35, 25557), (40, 25599), (42, 25605), (50, 25695), (62, 25797),

Gene: Krampus_39 Start: 25356, Stop: 25946, Start Num: 20

Candidate Starts for Krampus_39:

(Start: 20 @25356 has 23 MA's), (22, 25410), (29, 25446), (35, 25560), (40, 25602), (42, 25608), (50, 25698), (62, 25800),

Gene: Lambo_49 Start: 36805, Stop: 37665, Start Num: 7

Candidate Starts for Lambo_49:

(4, 36760), (5, 36772), (Start: 7 @36805 has 25 MA's), (9, 36847), (10, 36856), (13, 36883), (14, 36895), (19, 36937), (22, 36997), (30, 37081), (33, 37183), (41, 37297), (43, 37318), (48, 37348), (58, 37465), (64, 37525), (66, 37543), (68, 37585), (69, 37633),

Gene: Lila22_53 Start: 37402, Stop: 38262, Start Num: 7

Candidate Starts for Lila22_53:

(4, 37357), (5, 37369), (Start: 7 @37402 has 25 MA's), (9, 37444), (10, 37453), (13, 37480), (14, 37492), (18, 37528), (19, 37534), (22, 37594), (30, 37678), (33, 37780), (41, 37894), (43, 37915), (48, 37945), (58, 38062), (64, 38122), (68, 38182), (69, 38230),

Gene: LilyPad_40 Start: 32787, Stop: 33488, Start Num: 26

Candidate Starts for LilyPad_40:

(24, 32736), (Start: 26 @32787 has 8 MA's), (34, 33009), (36, 33024), (38, 33045), (52, 33192), (53, 33207), (56, 33225), (71, 33459), (72, 33465),

Gene: LittleFella_44 Start: 34392, Stop: 35063, Start Num: 12

Candidate Starts for LittleFella_44:

(Start: 12 @34392 has 1 MA's), (39, 34752), (44, 34782), (47, 34803), (49, 34824), (54, 34881), (57, 34893), (61, 34935), (67, 34974),

Gene: LuckyLeo_48 Start: 36209, Stop: 37057, Start Num: 7

Candidate Starts for LuckyLeo_48:

(4, 36164), (5, 36176), (Start: 7 @36209 has 25 MA's), (9, 36251), (10, 36260), (22, 36392), (33, 36578), (41, 36692), (45, 36737), (48, 36743), (58, 36860), (59, 36872), (61, 36908), (64, 36920), (68, 36980), (69, 37028),

Gene: Madi_37 Start: 31498, Stop: 32277, Start Num: 26

Candidate Starts for Madi_37:

(Start: 26 @31498 has 8 MA's), (28, 31537), (38, 31756), (47, 31819), (52, 31885), (55, 31912), (67, 32029), (70, 32134), (73, 32176),

Gene: MoiGyank_57 Start: 37848, Stop: 38708, Start Num: 7

Candidate Starts for MoiGyank_57:

(4, 37803), (5, 37815), (Start: 7 @37848 has 25 MA's), (9, 37890), (10, 37899), (14, 37938), (19, 37980), (22, 38040), (30, 38124), (33, 38226), (41, 38340), (43, 38361), (48, 38391), (58, 38508), (64,

38568), (68, 38628), (69, 38676),

Gene: MortySmith_37 Start: 24387, Stop: 24977, Start Num: 20

Candidate Starts for MortySmith_37:

(Start: 20 @24387 has 23 MA's), (22, 24441), (29, 24477), (35, 24591), (40, 24633), (46, 24684), (50, 24729), (62, 24831), (63, 24837),

Gene: NarutoRun_39 Start: 25324, Stop: 25914, Start Num: 20

Candidate Starts for NarutoRun_39:

(Start: 20 @25324 has 23 MA's), (22, 25378), (29, 25414), (35, 25528), (40, 25570), (50, 25666), (62, 25768), (63, 25774),

Gene: Neptune_39 Start: 25324, Stop: 25914, Start Num: 20

Candidate Starts for Neptune_39:

(Start: 20 @25324 has 23 MA's), (22, 25378), (29, 25414), (35, 25528), (40, 25570), (50, 25666), (62, 25768), (63, 25774),

Gene: NorManre_52 Start: 37060, Stop: 37920, Start Num: 7

Candidate Starts for NorManre_52:

(4, 37015), (5, 37027), (Start: 7 @37060 has 25 MA's), (9, 37102), (10, 37111), (14, 37150), (19, 37192), (22, 37252), (30, 37336), (33, 37438), (41, 37552), (43, 37573), (48, 37603), (58, 37720), (64, 37780), (68, 37840), (69, 37888),

Gene: NovaSharks_51 Start: 35610, Stop: 36443, Start Num: 7

Candidate Starts for NovaSharks_51:

(1, 35511), (4, 35565), (5, 35577), (Start: 7 @35610 has 25 MA's), (9, 35652), (10, 35661), (16, 35706), (22, 35775), (30, 35859), (33, 35961), (41, 36075), (48, 36126), (58, 36243), (59, 36255), (64, 36303), (65, 36315), (68, 36363),

Gene: OtterstedtS21_49 Start: 36720, Stop: 37580, Start Num: 7

Candidate Starts for OtterstedtS21_49:

(4, 36675), (5, 36687), (Start: 7 @36720 has 25 MA's), (9, 36762), (10, 36771), (13, 36798), (14, 36810), (18, 36846), (19, 36852), (22, 36912), (30, 36996), (33, 37098), (41, 37212), (43, 37233), (48, 37263), (58, 37380), (64, 37440), (68, 37500), (69, 37548),

Gene: OverHedge_40 Start: 25314, Stop: 25904, Start Num: 20

Candidate Starts for OverHedge_40:

(Start: 20 @25314 has 23 MA's), (22, 25368), (29, 25404), (35, 25518), (40, 25560), (50, 25656), (62, 25758), (63, 25764),

Gene: ParvusTarda_49 Start: 36222, Stop: 37082, Start Num: 7

Candidate Starts for ParvusTarda_49:

(4, 36177), (5, 36189), (Start: 7 @36222 has 25 MA's), (9, 36264), (10, 36273), (14, 36312), (19, 36354), (22, 36414), (30, 36498), (33, 36600), (41, 36714), (43, 36735), (48, 36765), (58, 36882), (64, 36942), (68, 37002), (69, 37050),

Gene: Patos_52 Start: 37059, Stop: 37919, Start Num: 7

Candidate Starts for Patos_52:

(4, 37014), (5, 37026), (Start: 7 @37059 has 25 MA's), (9, 37101), (10, 37110), (14, 37149), (19, 37191), (22, 37251), (30, 37335), (33, 37437), (41, 37551), (43, 37572), (48, 37602), (58, 37719), (64, 37779), (68, 37839), (69, 37887),

Gene: Penjamin420_52 Start: 37051, Stop: 37911, Start Num: 7

Candidate Starts for Penjamin420_52:

(4, 37006), (5, 37018), (Start: 7 @37051 has 25 MA's), (9, 37093), (10, 37102), (14, 37141), (19, 37183), (22, 37243), (30, 37327), (33, 37429), (41, 37543), (43, 37564), (48, 37594), (58, 37711), (64, 37771), (68, 37831), (69, 37879),

Gene: Pharpay_39 Start: 25369, Stop: 25959, Start Num: 20

Candidate Starts for Pharpay_39:

(Start: 20 @25369 has 23 MA's), (22, 25423), (29, 25459), (35, 25573), (40, 25615), (50, 25711), (62, 25813), (63, 25819),

Gene: PhunaPhoke_39 Start: 25342, Stop: 25932, Start Num: 20

Candidate Starts for PhunaPhoke_39:

(Start: 20 @25342 has 23 MA's), (22, 25396), (29, 25432), (35, 25546), (40, 25588), (50, 25684), (62, 25786), (63, 25792),

Gene: Potty_39 Start: 25347, Stop: 25937, Start Num: 20

Candidate Starts for Potty_39:

(Start: 20 @25347 has 23 MA's), (22, 25401), (29, 25437), (35, 25551), (40, 25593), (50, 25689), (62, 25791), (63, 25797),

Gene: Poultruss_39 Start: 25693, Stop: 26283, Start Num: 20

Candidate Starts for Poultruss_39:

(Start: 20 @25693 has 23 MA's), (22, 25747), (29, 25783), (35, 25897), (40, 25939), (42, 25945), (50, 26035), (62, 26137), (63, 26143),

Gene: Rachella_39 Start: 25350, Stop: 25940, Start Num: 20

Candidate Starts for Rachella_39:

(Start: 20 @25350 has 23 MA's), (22, 25404), (35, 25554), (40, 25596), (42, 25602), (50, 25692), (62, 25794),

Gene: Ranch_51 Start: 35892, Stop: 36752, Start Num: 7

Candidate Starts for Ranch_51:

(4, 35847), (5, 35859), (Start: 7 @35892 has 25 MA's), (9, 35934), (10, 35943), (13, 35970), (14, 35982), (18, 36018), (19, 36024), (22, 36084), (30, 36168), (33, 36270), (41, 36384), (43, 36405), (48, 36435), (58, 36552), (64, 36612), (66, 36630), (68, 36672), (69, 36720),

Gene: Rie18_39 Start: 24840, Stop: 25496, Start Num: 20

Candidate Starts for Rie18_39:

(6, 24684), (Start: 20 @24840 has 23 MA's), (21, 24885), (29, 24984), (31, 25029), (35, 25110), (40, 25152), (42, 25158), (50, 25248), (62, 25350),

Gene: Rumi_50 Start: 35307, Stop: 36140, Start Num: 7

Candidate Starts for Rumi_50:

(1, 35208), (4, 35262), (5, 35274), (Start: 7 @35307 has 25 MA's), (9, 35349), (10, 35358), (16, 35403), (22, 35472), (30, 35556), (33, 35658), (41, 35772), (48, 35823), (58, 35940), (59, 35952), (64, 36000), (65, 36012), (68, 36060),

Gene: Sadboi_50 Start: 37435, Stop: 38295, Start Num: 7

Candidate Starts for Sadboi_50:

(4, 37390), (5, 37402), (Start: 7 @37435 has 25 MA's), (9, 37477), (10, 37486), (13, 37513), (14, 37525), (18, 37561), (19, 37567), (22, 37627), (30, 37711), (33, 37813), (41, 37927), (43, 37948), (48, 37978), (58, 38095), (64, 38155), (68, 38215), (69, 38263),

Gene: Sampudon_50 Start: 37779, Stop: 38639, Start Num: 7

Candidate Starts for Sampudon_50:

(4, 37734), (5, 37746), (Start: 7 @37779 has 25 MA's), (9, 37821), (10, 37830), (14, 37869), (19, 37911), (22, 37971), (30, 38055), (33, 38157), (41, 38271), (43, 38292), (48, 38322), (58, 38439), (64, 38499), (68, 38559), (69, 38607),

Gene: Sienna_37 Start: 31498, Stop: 32277, Start Num: 26

Candidate Starts for Sienna_37:

(Start: 26 @31498 has 8 MA's), (28, 31537), (38, 31756), (47, 31819), (52, 31885), (55, 31912), (67, 32029), (70, 32134), (73, 32176),

Gene: Snakehole_39 Start: 24527, Stop: 25117, Start Num: 20

Candidate Starts for Snakehole_39:

(Start: 20 @24527 has 23 MA's), (22, 24581), (35, 24731), (40, 24773), (42, 24779), (50, 24869), (62, 24971), (63, 24977),

Gene: Suzy_37 Start: 32010, Stop: 32801, Start Num: 26

Candidate Starts for Suzy_37:

(Start: 26 @32010 has 8 MA's), (28, 32049), (38, 32268), (47, 32331), (52, 32397), (55, 32424), (67, 32541), (70, 32646), (73, 32688), (74, 32745),

Gene: Tedro_39 Start: 24820, Stop: 25410, Start Num: 20

Candidate Starts for Tedro_39:

(Start: 20 @24820 has 23 MA's), (22, 24874), (29, 24910), (35, 25024), (40, 25066), (50, 25162), (62, 25264), (63, 25270),

Gene: Terapin_38 Start: 31422, Stop: 32201, Start Num: 26

Candidate Starts for Terapin_38:

(Start: 26 @31422 has 8 MA's), (28, 31461), (38, 31680), (47, 31743), (52, 31809), (55, 31836), (67, 31953), (70, 32058), (73, 32100),

Gene: Tillicus_48 Start: 36141, Stop: 36998, Start Num: 7

Candidate Starts for Tillicus_48:

(5, 36108), (Start: 7 @36141 has 25 MA's), (9, 36183), (10, 36192), (14, 36231), (19, 36273), (22, 36333), (33, 36519), (37, 36609), (41, 36633), (45, 36678), (48, 36684), (58, 36801), (59, 36813), (61, 36849), (64, 36861), (68, 36921), (69, 36969),

Gene: Wojtek_48 Start: 36233, Stop: 37084, Start Num: 7

Candidate Starts for Wojtek_48:

(2, 36164), (4, 36188), (5, 36200), (Start: 7 @36233 has 25 MA's), (9, 36275), (10, 36284), (22, 36416), (33, 36602), (41, 36716), (43, 36737), (48, 36767), (58, 36884), (64, 36944), (68, 37004), (69, 37052),

Gene: Xenia2_47 Start: 35094, Stop: 35969, Start Num: 7

Candidate Starts for Xenia2_47:

(3, 35034), (Start: 7 @35094 has 25 MA's), (8, 35127), (11, 35160), (15, 35184), (17, 35205), (32, 35460), (33, 35487), (37, 35577), (39, 35598), (43, 35622), (49, 35673), (52, 35718), (60, 35805), (61, 35817), (64, 35829), (68, 35889), (69, 35937),

Gene: Yikes_51 Start: 37846, Stop: 38706, Start Num: 7

Candidate Starts for Yikes_51:

(4, 37801), (5, 37813), (Start: 7 @37846 has 25 MA's), (9, 37888), (10, 37897), (14, 37936), (19, 37978), (22, 38038), (30, 38122), (33, 38224), (41, 38338), (43, 38359), (48, 38389), (58, 38506), (64,

38566), (68, 38626), (69, 38674),

Gene: Zany_48 Start: 36845, Stop: 37696, Start Num: 7

Candidate Starts for Zany_48:

(4, 36800), (5, 36812), (Start: 7 @36845 has 25 MA's), (9, 36887), (10, 36896), (22, 37028), (30, 37112), (33, 37214), (41, 37328), (43, 37349), (48, 37379), (58, 37496), (64, 37556), (68, 37616), (69, 37664),