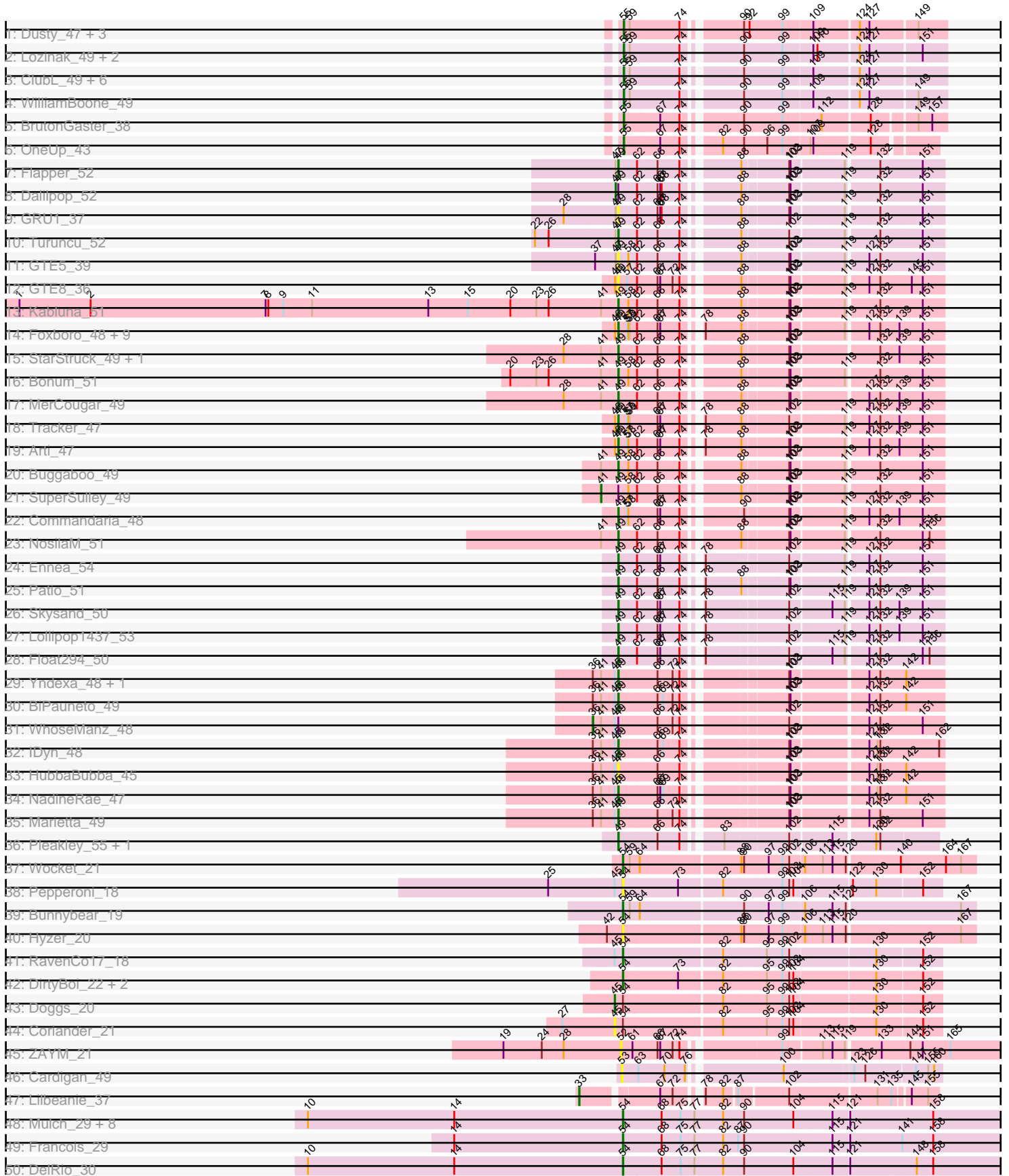
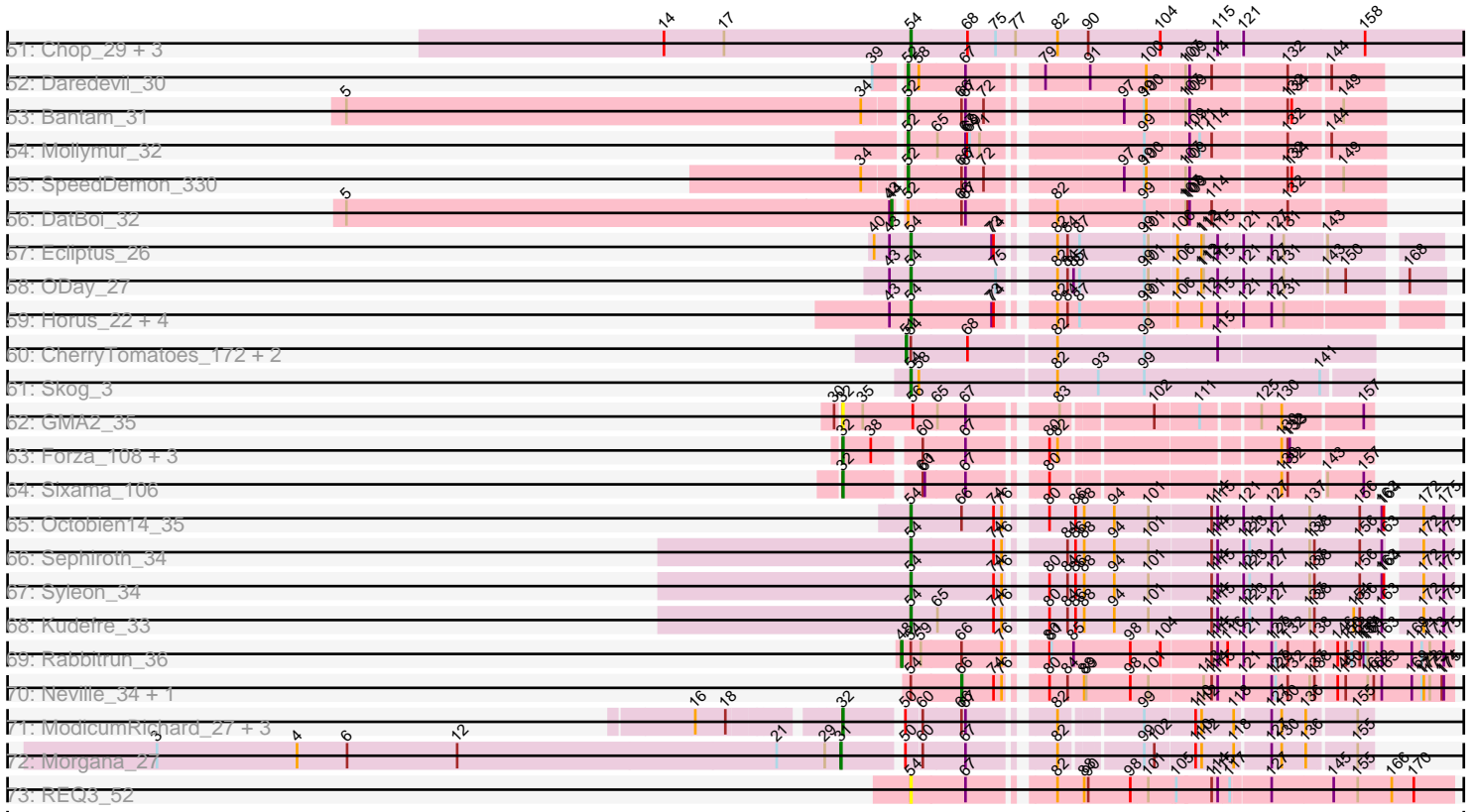


Pham 898



Pham 898



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 898 Report

This analysis was run 07/09/24 on database version 566.

Pham number 898 has 122 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Dusty_47, Norvs_50, Abscondus_48, Culver_49
- Track 2 : Lozinak_49, Engineer_50, Smoothie_50
- Track 3 : ClubL_49, Bachita_51, Miskis_51, PhinkBoden_49, Aphelion_49, Cucurbita_51, Toniann_49
- Track 4 : WilliamBoone_49
- Track 5 : BrutonGaster_38
- Track 6 : OneUp_43
- Track 7 : Flapper_52
- Track 8 : Dalilpop_52
- Track 9 : GRU1_37
- Track 10 : Turuncu_52
- Track 11 : GTE5_39
- Track 12 : GTE8_36
- Track 13 : Kabluna_51
- Track 14 : Foxboro_48, Kurt_47, KidneyBean_47, NovumRegina_47, GrootJr_49, Wheezy_47, Jifall16_46, NatB6_47, Phomeo_46, Emianna_47
- Track 15 : StarStruck_49, Outis_49
- Track 16 : Bonum_51
- Track 17 : MerCougar_49
- Track 18 : Tracker_47
- Track 19 : Arti_47
- Track 20 : Buggaboo_49
- Track 21 : SuperSulley_49
- Track 22 : Commandaria_48
- Track 23 : NosilaM_51
- Track 24 : Ennea_54
- Track 25 : Patio_51
- Track 26 : Skysand_50
- Track 27 : Lollipop1437_53
- Track 28 : Float294_50
- Track 29 : Yndexa_48, Sukkupi_48
- Track 30 : BiPauneto_49
- Track 31 : WhoseManz_48
- Track 32 : IDyn_48
- Track 33 : HubbaBubba_45
- Track 34 : NadineRae_47
- Track 35 : Marietta_49

- Track 36 : Pleakley_55, Fury_55
- Track 37 : Wocket_21
- Track 38 : Pepperoni_18
- Track 39 : Bunnybear_19
- Track 40 : Hyzer_20
- Track 41 : RavenCo17_18
- Track 42 : DirtyBoi_22, RayTheFireFly_21, Hedwig_22
- Track 43 : Doggs_20
- Track 44 : Coriander_21
- Track 45 : ZAYM_21
- Track 46 : Cardigan_49
- Track 47 : Lilbeanie_37
- Track 48 : Mulch_29, Parada_29, NancyRae_29, Nadeem_29, WheatThin_29, BetterKatz_29, Pimento_28, Brylie_29, Bock_29
- Track 49 : Francois_29
- Track 50 : DelRio_30
- Track 51 : Chop_29, Ayotoya_29, GrandSlam_29, Hamood_29
- Track 52 : Daredevil_30
- Track 53 : Bantam_31
- Track 54 : Mollymur_32
- Track 55 : SpeedDemon_330
- Track 56 : DatBoi_32
- Track 57 : Ecliptus_26
- Track 58 : ODay_27
- Track 59 : Horus_22, Crater_20, Apricot_21, Phistory_23, Leroy_22
- Track 60 : CherryTomatoes_172, Pupper_171, SCentae_170
- Track 61 : Skog_3
- Track 62 : GMA2_35
- Track 63 : Forza_108, Boopy_108, BlueNGold_107, Mareelih_106
- Track 64 : Sixama_106
- Track 65 : Octobien14_35
- Track 66 : Sephiroth_34
- Track 67 : Syleon_34
- Track 68 : Kudefre_33
- Track 69 : Rabbitrun_36
- Track 70 : Neville_34, Trax_34
- Track 71 : ModicumRichard_27, Aleemily_26, ObLaDi_27, Cafasso_27
- Track 72 : Morgana_27
- Track 73 : REQ3_52

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

The start number called the most often in the published annotations is 49, it was called in 34 of the 104 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arti_47, BiPauneto_49, Bonum_51, Buggaboo_49, Commandaria_48, Emianna_47, Ennea_54, Flapper_52, Float294_50, Foxboro_48, Fury_55, GRU1_37, GTE5_39, GTE8_36, GrootJr_49, HubbaBubba_45, IDyn_48, Jifall16_46, Kabluna_51, KidneyBean_47, Kurt_47, Lollipop1437_53, Marietta_49, MerCougar_49,

NadineRae_47, NatB6_47, NosilaM_51, NovumRegina_47, Outis_49, Patio_51, Phomeo_46, Pleakley_55, Skysand_50, StarStruck_49, Sukkupi_48, Tracker_47, Turuncu_52, Wheezy_47, Yndexa_48,

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

- Dalilpop_52, SuperSulley_49, WhoseManz_48,

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

- Abscondus_48, Aleemily_26, Aphelion_49, Apricot_21, Ayotoya_29, Bachita_51, Bantam_31, BetterKatz_29, BlueNGold_107, Bock_29, Boopy_108, BrutonGaster_38, Brylie_29, Bunnybear_19, Cafasso_27, Cardigan_49, CherryTomatoes_172, Chop_29, ClubL_49, Coriander_21, Crater_20, Cucurbita_51, Culver_49, Daredevil_30, DatBoi_32, DelRio_30, DirtyBoi_22, Doggs_20, Dusty_47, Ecliptus_26, Engineer_50, Forza_108, Francois_29, GMA2_35, GrandSlam_29, Hamood_29, Hedwig_22, Horus_22, Hyzer_20, Kudrefre_33, Leroy_22, Lilbeanie_37, Lozinak_49, Mareelih_106, Miskis_51, ModicumRichard_27, Mollymur_32, Morgana_27, Mulch_29, Nadeem_29, NancyRae_29, Neville_34, Norvs_50, ODay_27, ObLaDi_27, Octobien14_35, OneUp_43, Parada_29, Pepperoni_18, PhinkBoden_49, Phistory_23, Pimento_28, Pupper_171, REQ3_52, Rabbitrun_36, RavenCo17_18, RayTheFireFly_21, SCentae_170, Sephiroth_34, Sixama_106, Skog_3, Smoothie_50, SpeedDemon_330, Syleon_34, Toniann_49, Trax_34, WheatThin_29, WilliamBoone_49, Wocket_21, ZAYM_21,

Summary by start number:

Start 31:

- Found in 1 of 122 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Morgana_27 (DZ),

Start 32:

- Found in 10 of 122 (8.2%) of genes in pham
- Manual Annotations of this start: 8 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily_26 (DZ), BlueNGold_107 (DS), Boopy_108 (DS), Cafasso_27 (DZ), Forza_108 (DS), GMA2_35 (DS), Mareelih_106 (DS), ModicumRichard_27 (DZ), ObLaDi_27 (DZ), Sixama_106 (DS),

Start 33:

- Found in 1 of 122 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie_37 (DE5),

Start 36:

- Found in 8 of 122 (6.6%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 12.5% of time when present
- Phage (with cluster) where this start called: WhoseManz_48 (CR4),

Start 41:

- Found in 16 of 122 (13.1%) of genes in pham

- Manual Annotations of this start: 1 of 104
- Called 6.2% of time when present
- Phage (with cluster) where this start called: SuperSulley_49 (CR2),

Start 44:

- Found in 1 of 122 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DatBoi_32 (DL),

Start 45:

- Found in 12 of 122 (9.8%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Coriander_21 (DB), Doggs_20 (DB),

Start 47:

- Found in 5 of 122 (4.1%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Dalilpop_52 (CR1),

Start 48:

- Found in 1 of 122 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rabbitrun_36 (DU2),

Start 49:

- Found in 42 of 122 (34.4%) of genes in pham
- Manual Annotations of this start: 34 of 104
- Called 92.9% of time when present
- Phage (with cluster) where this start called: Arti_47 (CR2), BiPauneto_49 (CR4), Bonum_51 (CR2), Buggaboo_49 (CR2), Commandaria_48 (CR2), Emianna_47 (CR2), Ennea_54 (CR3), Flapper_52 (CR1), Float294_50 (CR3), Foxboro_48 (CR2), Fury_55 (CR5), GRU1_37 (CR1), GTE5_39 (CR1), GTE8_36 (CR2), GrootJr_49 (CR2), HubbaBubba_45 (CR4), IDyn_48 (CR4), Jifall16_46 (CR2), Kabluna_51 (CR2), KidneyBean_47 (CR2), Kurt_47 (CR2), Lollipop1437_53 (CR3), Marietta_49 (CR4), MerCougar_49 (CR2), NadineRae_47 (CR4), NatB6_47 (CR2), NosilaM_51 (CR2), NovumRegina_47 (CR2), Outis_49 (CR2), Patio_51 (CR3), Phomeo_46 (CR2), Pleakley_55 (CR5), Skysand_50 (CR3), StarStruck_49 (CR2), Sukkupi_48 (CR4), Tracker_47 (CR2), Turuncu_52 (CR1), Wheezy_47 (CR2), Yndexa_48 (CR4),

Start 51:

- Found in 3 of 122 (2.5%) of genes in pham
- Manual Annotations of this start: 3 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryTomatoes_172 (DO), Pupper_171 (DO), SCentae_170 (DO),

Start 52:

- Found in 6 of 122 (4.9%) of genes in pham
- Manual Annotations of this start: 4 of 104

- Called 83.3% of time when present
- Phage (with cluster) where this start called: Bantam_31 (DL), Daredevil_30 (DL), Mollymur_32 (DL), SpeedDemon_330 (DL), ZAYM_21 (DB),

Start 53:

- Found in 1 of 122 (0.8%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cardigan_49 (DD),

Start 54:

- Found in 44 of 122 (36.1%) of genes in pham
- Manual Annotations of this start: 31 of 104
- Called 81.8% of time when present
- Phage (with cluster) where this start called: Apricot_21 (DN3), Ayotoya_29 (DI), BetterKatz_29 (DI), Bock_29 (DI), Brylie_29 (DI), Bunnybear_19 (CZ), Chop_29 (DI), Crater_20 (DN3), DelRio_30 (DI), DirtyBoi_22 (DB), Ecliptus_26 (DN), Francois_29 (DI), GrandSlam_29 (DI), Hamood_29 (DI), Hedwig_22 (DB), Horus_22 (DN1), Hyzer_20 (CZ1), Kudrefre_33 (DU1), Leroy_22 (DN1), Mulch_29 (DI), Nadeem_29 (DI), NancyRae_29 (DI), ODay_27 (DN), Octobien14_35 (DU1), Parada_29 (DI), Pepperoni_18 (CZ), Phistory_23 (DN1), Pimento_28 (DI), REQ3_52 (singleton), RavenCo17_18 (CZ8), RayTheFireFly_21 (DB), Sephiroth_34 (DU1), Skog_3 (DO), Syleon_34 (DU1), WheatThin_29 (DI), Wocket_21 (CV),

Start 55:

- Found in 17 of 122 (13.9%) of genes in pham
- Manual Annotations of this start: 14 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abscondus_48 (CQ), Aphelion_49 (CQ1), Bachita_51 (CQ1), BrutonGaster_38 (CQ2), ClubL_49 (CQ1), Cucurbita_51 (CQ1), Culver_49 (CQ1), Dusty_47 (CQ), Engineer_50 (CQ1), Lozinak_49 (CQ1), Miskis_51 (CQ), Norvs_50 (CQ), OneUp_43 (CQ2), PhinkBoden_49 (CQ1), Smoothie_50 (CQ1), Toniann_49 (CQ1), WilliamBoone_49 (CQ1),

Start 66:

- Found in 54 of 122 (44.3%) of genes in pham
- Manual Annotations of this start: 2 of 104
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Neville_34 (DU2), Trax_34 (DU2),

Summary by clusters:

There are 26 clusters represented in this pham: DN, DO, DL, DI, DD, CZ1, DB, singleton, DZ, CZ8, DS, CV, DN1, DN3, CQ2, CQ1, CZ, DU1, CQ, DU2, CR2, CR3, CR1, CR4, CR5, DE5,

Info for manual annotations of cluster CQ:

- Start number 55 was manually annotated 1 time for cluster CQ.

Info for manual annotations of cluster CQ1:

- Start number 55 was manually annotated 11 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 55 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CR1:

- Start number 47 was manually annotated 1 time for cluster CR1.
- Start number 49 was manually annotated 2 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 41 was manually annotated 1 time for cluster CR2.
- Start number 49 was manually annotated 19 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 49 was manually annotated 5 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 36 was manually annotated 1 time for cluster CR4.
- Start number 49 was manually annotated 6 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 49 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CV:

- Start number 54 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ:

- Start number 54 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ8:

- Start number 54 was manually annotated 1 time for cluster CZ8.

Info for manual annotations of cluster DB:

- Start number 45 was manually annotated 1 time for cluster DB.
- Start number 54 was manually annotated 3 times for cluster DB.

Info for manual annotations of cluster DE5:

- Start number 33 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DI:

- Start number 54 was manually annotated 13 times for cluster DI.

Info for manual annotations of cluster DL:

- Start number 44 was manually annotated 1 time for cluster DL.
- Start number 52 was manually annotated 4 times for cluster DL.

Info for manual annotations of cluster DN:

- Start number 54 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 54 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 54 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DO:

- Start number 51 was manually annotated 3 times for cluster DO.
- Start number 54 was manually annotated 1 time for cluster DO.

Info for manual annotations of cluster DS:

- Start number 32 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster DU1:

- Start number 54 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 48 was manually annotated 1 time for cluster DU2.
- Start number 66 was manually annotated 2 times for cluster DU2.

Info for manual annotations of cluster DZ:

- Start number 31 was manually annotated 1 time for cluster DZ.
- Start number 32 was manually annotated 3 times for cluster DZ.

Gene Information:

Gene: Abscondus_48 Start: 31068, Stop: 31709, Start Num: 55

Candidate Starts for Abscondus_48:

(Start: 55 @31068 has 14 MA's), (59, 31077), (74, 31185), (90, 31287), (92, 31299), (99, 31371), (109, 31434), (124, 31527), (127, 31548), (149, 31647),

Gene: Aleemily_26 Start: 24092, Stop: 24766, Start Num: 32

Candidate Starts for Aleemily_26:

(16, 23918), (18, 23963), (Start: 32 @24092 has 8 MA's), (50, 24164), (60, 24185), (Start: 66 @24242 has 2 MA's), (67, 24248), (82, 24350), (99, 24452), (110, 24524), (112, 24533), (118, 24578), (127, 24626), (130, 24641), (136, 24677), (155, 24743),

Gene: Aphelion_49 Start: 31337, Stop: 31978, Start Num: 55

Candidate Starts for Aphelion_49:

(Start: 55 @31337 has 14 MA's), (59, 31346), (74, 31454), (90, 31556), (99, 31640), (109, 31703), (124, 31796), (127, 31817),

Gene: Apricot_21 Start: 18224, Stop: 18922, Start Num: 54

Candidate Starts for Apricot_21:

(43, 18194), (Start: 54 @18224 has 31 MA's), (73, 18344), (74, 18347), (82, 18407), (84, 18422), (87, 18437), (99, 18530), (101, 18536), (106, 18575), (112, 18611), (115, 18635), (121, 18662), (127, 18704), (131, 18722),

Gene: Arti_47 Start: 36721, Stop: 37353, Start Num: 49

Candidate Starts for Arti_47:

(46, 36715), (Start: 49 @36721 has 34 MA's), (57, 36736), (58, 36739), (62, 36757), (Start: 66 @36802 has 2 MA's), (67, 36808), (74, 36850), (78, 36874), (88, 36946), (102, 37036), (103, 37039), (119, 37150), (127, 37192), (132, 37216), (139, 37258), (151, 37306),

Gene: Ayotoya_29 Start: 25594, Stop: 26415, Start Num: 54

Candidate Starts for Ayotoya_29:

(14, 25225), (17, 25315), (Start: 54 @25594 has 31 MA's), (68, 25678), (75, 25720), (77, 25750), (82, 25813), (90, 25858), (104, 25963), (115, 26047), (121, 26080), (158, 26257),

Gene: Bachita_51 Start: 31770, Stop: 32411, Start Num: 55

Candidate Starts for Bachita_51:

(Start: 55 @31770 has 14 MA's), (59, 31779), (74, 31887), (90, 31989), (99, 32073), (109, 32136), (124, 32229), (127, 32250),

Gene: Bantam_31 Start: 28997, Stop: 29641, Start Num: 52

Candidate Starts for Bantam_31:

(5, 28178), (34, 28949), (Start: 52 @28997 has 4 MA's), (Start: 66 @29072 has 2 MA's), (67, 29078), (72, 29105), (97, 29276), (99, 29306), (100, 29309), (107, 29363), (109, 29369), (132, 29507), (134, 29513), (149, 29582),

Gene: BetterKatz_29 Start: 25067, Stop: 25888, Start Num: 54

Candidate Starts for BetterKatz_29:

(10, 24377), (14, 24698), (Start: 54 @25067 has 31 MA's), (68, 25151), (75, 25193), (77, 25223), (82, 25286), (90, 25331), (104, 25436), (115, 25520), (121, 25553), (158, 25730),

Gene: BiPauneto_49 Start: 36230, Stop: 36862, Start Num: 49

Candidate Starts for BiPauneto_49:

(Start: 36 @36179 has 1 MA's), (Start: 41 @36197 has 1 MA's), (Start: 45 @36224 has 1 MA's), (Start: 49 @36230 has 34 MA's), (Start: 66 @36311 has 2 MA's), (69, 36323), (72, 36344), (74, 36359), (102, 36545), (103, 36548), (127, 36701), (132, 36725), (142, 36779),

Gene: BlueNGold_107 Start: 66764, Stop: 67435, Start Num: 32

Candidate Starts for BlueNGold_107:

(Start: 32 @66764 has 8 MA's), (38, 66806), (60, 66863), (67, 66926), (80, 67016), (82, 67028), (130, 67310), (132, 67319), (133, 67322),

Gene: Bock_29 Start: 24817, Stop: 25638, Start Num: 54

Candidate Starts for Bock_29:

(10, 24127), (14, 24448), (Start: 54 @24817 has 31 MA's), (68, 24901), (75, 24943), (77, 24973), (82, 25036), (90, 25081), (104, 25186), (115, 25270), (121, 25303), (158, 25480),

Gene: Bonum_51 Start: 37374, Stop: 38006, Start Num: 49

Candidate Starts for Bonum_51:

(20, 37146), (23, 37203), (26, 37230), (Start: 41 @37341 has 1 MA's), (Start: 49 @37374 has 34 MA's), (58, 37392), (62, 37410), (Start: 66 @37455 has 2 MA's), (74, 37503), (88, 37599), (102, 37689), (103, 37692), (119, 37803), (132, 37869), (151, 37959),

Gene: Boopy_108 Start: 66776, Stop: 67447, Start Num: 32

Candidate Starts for Boopy_108:

(Start: 32 @66776 has 8 MA's), (38, 66818), (60, 66875), (67, 66938), (80, 67028), (82, 67040), (130, 67322), (132, 67331), (133, 67334),

Gene: BrutonGaster_38 Start: 28466, Stop: 29098, Start Num: 55

Candidate Starts for BrutonGaster_38:

(Start: 55 @28466 has 14 MA's), (67, 28541), (74, 28583), (90, 28685), (99, 28769), (112, 28850), (128, 28949), (149, 29036), (157, 29066),

Gene: Brylie_29 Start: 24808, Stop: 25626, Start Num: 54

Candidate Starts for Brylie_29:

(10, 24118), (14, 24439), (Start: 54 @24808 has 31 MA's), (68, 24892), (75, 24934), (77, 24964), (82, 25027), (90, 25072), (104, 25177), (115, 25261), (121, 25294), (158, 25468),

Gene: Buggaboo_49 Start: 37853, Stop: 38485, Start Num: 49

Candidate Starts for Buggaboo_49:

(Start: 41 @37820 has 1 MA's), (Start: 49 @37853 has 34 MA's), (58, 37871), (62, 37889), (Start: 66 @37934 has 2 MA's), (74, 37982), (88, 38078), (102, 38168), (103, 38171), (119, 38282), (132, 38348), (151, 38438),

Gene: Bunnybear_19 Start: 19396, Stop: 20130, Start Num: 54

Candidate Starts for Bunnybear_19:

(Start: 54 @19396 has 31 MA's), (59, 19411), (64, 19432), (90, 19648), (97, 19702), (99, 19729), (106, 19774), (115, 19834), (120, 19861), (167, 20098),

Gene: Cafasso_27 Start: 24666, Stop: 25340, Start Num: 32

Candidate Starts for Cafasso_27:

(16, 24492), (18, 24537), (Start: 32 @24666 has 8 MA's), (50, 24738), (60, 24759), (Start: 66 @24816 has 2 MA's), (67, 24822), (82, 24924), (99, 25026), (110, 25098), (112, 25107), (118, 25152), (127, 25200), (130, 25215), (136, 25251), (155, 25317),

Gene: Cardigan_49 Start: 34609, Stop: 35250, Start Num: 53

Candidate Starts for Cardigan_49:

(53, 34609), (63, 34645), (70, 34702), (76, 34747), (100, 34924), (123, 35068), (126, 35092), (147, 35194), (155, 35221), (160, 35233),

Gene: CherryTomatoes_172 Start: 124710, Stop: 125378, Start Num: 51

Candidate Starts for CherryTomatoes_172:

(Start: 51 @124710 has 3 MA's), (Start: 54 @124716 has 31 MA's), (68, 124800), (82, 124923), (99, 125049), (115, 125157),

Gene: Chop_29 Start: 25342, Stop: 26163, Start Num: 54

Candidate Starts for Chop_29:

(14, 24973), (17, 25063), (Start: 54 @25342 has 31 MA's), (68, 25426), (75, 25468), (77, 25498), (82, 25561), (90, 25606), (104, 25711), (115, 25795), (121, 25828), (158, 26005),

Gene: ClubL_49 Start: 31259, Stop: 31900, Start Num: 55

Candidate Starts for ClubL_49:

(Start: 55 @31259 has 14 MA's), (59, 31268), (74, 31376), (90, 31478), (99, 31562), (109, 31625), (124, 31718), (127, 31739),

Gene: Commandaria_48 Start: 37837, Stop: 38469, Start Num: 49

Candidate Starts for Commandaria_48:

(Start: 49 @37837 has 34 MA's), (57, 37852), (58, 37855), (Start: 66 @37918 has 2 MA's), (67, 37924), (74, 37966), (90, 38068), (102, 38152), (103, 38155), (119, 38266), (127, 38308), (132, 38332), (139, 38374), (151, 38422),

Gene: Coriander_21 Start: 19754, Stop: 20422, Start Num: 45

Candidate Starts for Coriander_21:

(27, 19643), (Start: 45 @19754 has 1 MA's), (Start: 54 @19769 has 31 MA's), (82, 19976), (95, 20069), (99, 20099), (102, 20114), (104, 20123), (130, 20294), (152, 20384),

Gene: Crater_20 Start: 18224, Stop: 18922, Start Num: 54

Candidate Starts for Crater_20:

(43, 18194), (Start: 54 @18224 has 31 MA's), (73, 18344), (74, 18347), (82, 18407), (84, 18422), (87, 18437), (99, 18530), (101, 18536), (106, 18575), (112, 18611), (115, 18635), (121, 18662), (127, 18704), (131, 18722),

Gene: Cucurbita_51 Start: 32629, Stop: 33270, Start Num: 55

Candidate Starts for Cucurbita_51:

(Start: 55 @32629 has 14 MA's), (59, 32638), (74, 32746), (90, 32848), (99, 32932), (109, 32995), (124, 33088), (127, 33109),

Gene: Culver_49 Start: 31068, Stop: 31709, Start Num: 55

Candidate Starts for Culver_49:

(Start: 55 @31068 has 14 MA's), (59, 31077), (74, 31185), (90, 31287), (92, 31299), (99, 31371), (109, 31434), (124, 31527), (127, 31548), (149, 31647),

Gene: Dalilpop_52 Start: 38988, Stop: 39626, Start Num: 47

Candidate Starts for Dalilpop_52:

(Start: 47 @38988 has 1 MA's), (Start: 49 @38994 has 34 MA's), (62, 39030), (Start: 66 @39075 has 2 MA's), (67, 39081), (68, 39084), (74, 39123), (88, 39219), (102, 39309), (103, 39312), (119, 39423), (132, 39489), (151, 39579),

Gene: Daredevil_30 Start: 27533, Stop: 28168, Start Num: 52

Candidate Starts for Daredevil_30:

(39, 27494), (Start: 52 @27533 has 4 MA's), (58, 27548), (67, 27617), (79, 27701), (91, 27764), (100, 27848), (107, 27902), (109, 27908), (114, 27941), (132, 28046), (144, 28094),

Gene: DatBoi_32 Start: 29731, Stop: 30384, Start Num: 44

Candidate Starts for DatBoi_32:

(5, 28915), (43, 29728), (Start: 44 @29731 has 1 MA's), (Start: 52 @29740 has 4 MA's), (Start: 66 @29815 has 2 MA's), (67, 29821), (82, 29923), (99, 30049), (107, 30106), (108, 30109), (109, 30112), (114, 30145), (132, 30250),

Gene: DelRio_30 Start: 25813, Stop: 26634, Start Num: 54

Candidate Starts for DelRio_30:

(10, 25123), (14, 25444), (Start: 54 @25813 has 31 MA's), (68, 25897), (75, 25939), (77, 25969), (82, 26032), (90, 26077), (104, 26182), (115, 26266), (121, 26299), (148, 26440), (158, 26476),

Gene: DirtyBoi_22 Start: 19230, Stop: 19883, Start Num: 54

Candidate Starts for DirtyBoi_22:

(Start: 54 @19230 has 31 MA's), (73, 19350), (82, 19437), (95, 19530), (99, 19560), (102, 19575), (104, 19584), (130, 19755), (152, 19845),

Gene: Doggs_20 Start: 19453, Stop: 20121, Start Num: 45

Candidate Starts for Doggs_20:

(Start: 45 @19453 has 1 MA's), (Start: 54 @19468 has 31 MA's), (82, 19675), (95, 19768), (99, 19798), (102, 19813), (104, 19822), (130, 19993), (152, 20083),

Gene: Dusty_47 Start: 31068, Stop: 31709, Start Num: 55

Candidate Starts for Dusty_47:

(Start: 55 @31068 has 14 MA's), (59, 31077), (74, 31185), (90, 31287), (92, 31299), (99, 31371), (109, 31434), (124, 31527), (127, 31548), (149, 31647),

Gene: Ecliptus_26 Start: 20550, Stop: 21248, Start Num: 54

Candidate Starts for Ecliptus_26:

(40, 20499), (43, 20520), (Start: 54 @20550 has 31 MA's), (73, 20670), (74, 20673), (82, 20733), (84, 20748), (87, 20763), (99, 20856), (101, 20862), (106, 20901), (112, 20937), (113, 20940), (115, 20961), (121, 20988), (127, 21030), (131, 21048), (143, 21102),

Gene: Emianna_47 Start: 37713, Stop: 38345, Start Num: 49

Candidate Starts for Emianna_47:

(46, 37707), (Start: 49 @37713 has 34 MA's), (57, 37728), (58, 37731), (59, 37734), (62, 37749), (Start: 66 @37794 has 2 MA's), (67, 37800), (74, 37842), (78, 37866), (88, 37938), (102, 38028), (103, 38031), (119, 38142), (127, 38184), (132, 38208), (139, 38250), (151, 38298),

Gene: Engineer_50 Start: 31285, Stop: 31926, Start Num: 55

Candidate Starts for Engineer_50:

(Start: 55 @31285 has 14 MA's), (59, 31294), (74, 31402), (90, 31504), (99, 31588), (109, 31651), (110, 31660), (124, 31744), (127, 31765), (151, 31873),

Gene: Ennea_54 Start: 38716, Stop: 39348, Start Num: 49

Candidate Starts for Ennea_54:

(Start: 49 @38716 has 34 MA's), (62, 38752), (Start: 66 @38797 has 2 MA's), (67, 38803), (74, 38845), (78, 38869), (102, 39031), (119, 39145), (127, 39187), (132, 39211), (151, 39301),

Gene: Flapper_52 Start: 38425, Stop: 39057, Start Num: 49

Candidate Starts for Flapper_52:

(Start: 47 @38419 has 1 MA's), (Start: 49 @38425 has 34 MA's), (62, 38461), (Start: 66 @38506 has 2 MA's), (74, 38554), (88, 38650), (102, 38740), (103, 38743), (119, 38854), (132, 38920), (151, 39010),

Gene: Float294_50 Start: 38158, Stop: 38790, Start Num: 49

Candidate Starts for Float294_50:

(Start: 49 @38158 has 34 MA's), (62, 38194), (Start: 66 @38239 has 2 MA's), (67, 38245), (74, 38287), (78, 38311), (102, 38473), (115, 38560), (119, 38587), (127, 38629), (132, 38653), (151, 38743), (156, 38758),

Gene: Forza_108 Start: 66692, Stop: 67363, Start Num: 32

Candidate Starts for Forza_108:

(Start: 32 @66692 has 8 MA's), (38, 66734), (60, 66791), (67, 66854), (80, 66944), (82, 66956), (130, 67238), (132, 67247), (133, 67250),

Gene: Foxboro_48 Start: 38219, Stop: 38851, Start Num: 49

Candidate Starts for Foxboro_48:

(46, 38213), (Start: 49 @38219 has 34 MA's), (57, 38234), (58, 38237), (59, 38240), (62, 38255), (Start: 66 @38300 has 2 MA's), (67, 38306), (74, 38348), (78, 38372), (88, 38444), (102, 38534), (103, 38537), (119, 38648), (127, 38690), (132, 38714), (139, 38756), (151, 38804),

Gene: Francois_29 Start: 24831, Stop: 25652, Start Num: 54

Candidate Starts for Francois_29:

(14, 24462), (Start: 54 @24831 has 31 MA's), (68, 24915), (75, 24957), (77, 24987), (82, 25050), (87, 25083), (90, 25095), (115, 25284), (121, 25317), (141, 25428), (158, 25494),

Gene: Fury_55 Start: 36898, Stop: 37521, Start Num: 49

Candidate Starts for Fury_55:

(Start: 49 @36898 has 34 MA's), (Start: 66 @36979 has 2 MA's), (74, 37027), (83, 37090), (102, 37219), (115, 37306), (130, 37390), (132, 37399),

Gene: GMA2_35 Start: 39327, Stop: 40022, Start Num: 32

Candidate Starts for GMA2_35:

(30, 39321), (Start: 32 @39327 has 8 MA's), (35, 39357), (56, 39432), (65, 39468), (67, 39510), (83, 39615), (102, 39732), (111, 39795), (125, 39864), (130, 39894), (157, 40008),

Gene: GRU1_37 Start: 29972, Stop: 30604, Start Num: 49

Candidate Starts for GRU1_37:

(28, 29861), (Start: 47 @29966 has 1 MA's), (Start: 49 @29972 has 34 MA's), (62, 30008), (Start: 66 @30053 has 2 MA's), (67, 30059), (68, 30062), (74, 30101), (88, 30197), (102, 30287), (103, 30290), (119, 30401), (132, 30467), (151, 30557),

Gene: GTE5_39 Start: 31282, Stop: 31914, Start Num: 49

Candidate Starts for GTE5_39:

(37, 31234), (Start: 47 @31276 has 1 MA's), (Start: 49 @31282 has 34 MA's), (58, 31300), (62, 31318), (Start: 66 @31363 has 2 MA's), (74, 31411), (88, 31507), (102, 31597), (103, 31600), (119, 31711), (127, 31753), (132, 31777), (151, 31867),

Gene: GTE8_36 Start: 30971, Stop: 31603, Start Num: 49

Candidate Starts for GTE8_36:

(46, 30965), (Start: 49 @30971 has 34 MA's), (57, 30986), (62, 31007), (Start: 66 @31052 has 2 MA's), (67, 31058), (72, 31085), (74, 31100), (88, 31196), (102, 31286), (103, 31289), (119, 31400), (127, 31442), (132, 31466), (145, 31532), (151, 31556),

Gene: GrandSlam_29 Start: 25342, Stop: 26163, Start Num: 54

Candidate Starts for GrandSlam_29:

(14, 24973), (17, 25063), (Start: 54 @25342 has 31 MA's), (68, 25426), (75, 25468), (77, 25498), (82, 25561), (90, 25606), (104, 25711), (115, 25795), (121, 25828), (158, 26005),

Gene: GrootJr_49 Start: 37095, Stop: 37727, Start Num: 49

Candidate Starts for GrootJr_49:

(46, 37089), (Start: 49 @37095 has 34 MA's), (57, 37110), (58, 37113), (59, 37116), (62, 37131), (Start: 66 @37176 has 2 MA's), (67, 37182), (74, 37224), (78, 37248), (88, 37320), (102, 37410), (103, 37413), (119, 37524), (127, 37566), (132, 37590), (139, 37632), (151, 37680),

Gene: Hamood_29 Start: 25342, Stop: 26163, Start Num: 54

Candidate Starts for Hamood_29:

(14, 24973), (17, 25063), (Start: 54 @25342 has 31 MA's), (68, 25426), (75, 25468), (77, 25498), (82, 25561), (90, 25606), (104, 25711), (115, 25795), (121, 25828), (158, 26005),

Gene: Hedwig_22 Start: 19226, Stop: 19879, Start Num: 54

Candidate Starts for Hedwig_22:

(Start: 54 @19226 has 31 MA's), (73, 19346), (82, 19433), (95, 19526), (99, 19556), (102, 19571), (104, 19580), (130, 19751), (152, 19841),

Gene: Horus_22 Start: 18688, Stop: 19386, Start Num: 54

Candidate Starts for Horus_22:

(43, 18658), (Start: 54 @18688 has 31 MA's), (73, 18808), (74, 18811), (82, 18871), (84, 18886), (87, 18901), (99, 18994), (101, 19000), (106, 19039), (112, 19075), (115, 19099), (121, 19126), (127, 19168), (131, 19186),

Gene: HubbaBubba_45 Start: 33248, Stop: 33880, Start Num: 49

Candidate Starts for HubbaBubba_45:

(Start: 36 @33197 has 1 MA's), (Start: 41 @33215 has 1 MA's), (Start: 45 @33242 has 1 MA's), (Start: 49 @33248 has 34 MA's), (Start: 66 @33329 has 2 MA's), (74, 33377), (102, 33563), (103, 33566), (127, 33719), (131, 33737), (132, 33743), (142, 33797),

Gene: Hyzer_20 Start: 19524, Stop: 20258, Start Num: 54

Candidate Starts for Hyzer_20:

(42, 19494), (Start: 54 @19524 has 31 MA's), (88, 19770), (90, 19776), (97, 19830), (99, 19857), (106, 19902), (113, 19941), (115, 19962), (120, 19989), (167, 20226),

Gene: IDyn_48 Start: 34677, Stop: 35309, Start Num: 49

Candidate Starts for IDyn_48:

(Start: 36 @34626 has 1 MA's), (Start: 41 @34644 has 1 MA's), (Start: 45 @34671 has 1 MA's), (Start: 49 @34677 has 34 MA's), (Start: 66 @34758 has 2 MA's), (69, 34770), (74, 34806), (102, 34992), (103, 34995), (127, 35148), (131, 35166), (132, 35172), (162, 35298),

Gene: Jifall16_46 Start: 37367, Stop: 37999, Start Num: 49

Candidate Starts for Jifall16_46:

(46, 37361), (Start: 49 @37367 has 34 MA's), (57, 37382), (58, 37385), (59, 37388), (62, 37403), (Start: 66 @37448 has 2 MA's), (67, 37454), (74, 37496), (78, 37520), (88, 37592), (102, 37682), (103, 37685), (119, 37796), (127, 37838), (132, 37862), (139, 37904), (151, 37952),

Gene: Kabluna_51 Start: 36789, Stop: 37421, Start Num: 49

Candidate Starts for Kabluna_51:

(1, 35484), (2, 35640), (7, 36024), (8, 36030), (9, 36063), (11, 36126), (13, 36381), (15, 36468), (20, 36561), (23, 36618), (26, 36645), (Start: 41 @36756 has 1 MA's), (Start: 49 @36789 has 34 MA's), (58, 36807), (62, 36825), (Start: 66 @36870 has 2 MA's), (74, 36918), (88, 37014), (102, 37104), (103, 37107), (119, 37218), (132, 37284), (151, 37374),

Gene: KidneyBean_47 Start: 37491, Stop: 38123, Start Num: 49

Candidate Starts for KidneyBean_47:

(46, 37485), (Start: 49 @37491 has 34 MA's), (57, 37506), (58, 37509), (59, 37512), (62, 37527), (Start: 66 @37572 has 2 MA's), (67, 37578), (74, 37620), (78, 37644), (88, 37716), (102, 37806), (103, 37809), (119, 37920), (127, 37962), (132, 37986), (139, 38028), (151, 38076),

Gene: Kudrefre_33 Start: 28200, Stop: 28919, Start Num: 54

Candidate Starts for Kudrefre_33:

(Start: 54 @28200 has 31 MA's), (65, 28239), (74, 28320), (76, 28332), (80, 28368), (84, 28395), (86, 28404), (88, 28416), (94, 28461), (101, 28509), (114, 28599), (115, 28608), (121, 28641), (123, 28650), (127, 28683), (137, 28737), (138, 28740), (154, 28797), (156, 28806), (163, 28839), (172, 28878), (175, 28905),

Gene: Kurt_47 Start: 37728, Stop: 38360, Start Num: 49

Candidate Starts for Kurt_47:

(46, 37722), (Start: 49 @37728 has 34 MA's), (57, 37743), (58, 37746), (59, 37749), (62, 37764), (Start: 66 @37809 has 2 MA's), (67, 37815), (74, 37857), (78, 37881), (88, 37953), (102, 38043), (103, 38046), (119, 38157), (127, 38199), (132, 38223), (139, 38265), (151, 38313),

Gene: Leroy_22 Start: 18689, Stop: 19387, Start Num: 54

Candidate Starts for Leroy_22:

(43, 18659), (Start: 54 @18689 has 31 MA's), (73, 18809), (74, 18812), (82, 18872), (84, 18887), (87, 18902), (99, 18995), (101, 19001), (106, 19040), (112, 19076), (115, 19100), (121, 19127), (127, 19169), (131, 19187),

Gene: Lilbeanie_37 Start: 31203, Stop: 31874, Start Num: 33

Candidate Starts for Lilbeanie_37:

(Start: 33 @31203 has 1 MA's), (67, 31356), (72, 31383), (78, 31422), (82, 31458), (87, 31482), (102, 31578), (131, 31758), (135, 31788), (145, 31815), (155, 31851),

Gene: Lollipop1437_53 Start: 38704, Stop: 39336, Start Num: 49

Candidate Starts for Lollipop1437_53:

(Start: 49 @38704 has 34 MA's), (62, 38740), (Start: 66 @38785 has 2 MA's), (67, 38791), (74, 38833), (78, 38857), (102, 39019), (119, 39133), (127, 39175), (132, 39199), (139, 39241), (151, 39289),

Gene: Lozinak_49 Start: 31340, Stop: 31981, Start Num: 55

Candidate Starts for Lozinak_49:

(Start: 55 @31340 has 14 MA's), (59, 31349), (74, 31457), (90, 31559), (99, 31643), (109, 31706), (110, 31715), (124, 31799), (127, 31820), (151, 31928),

Gene: Mareelih_106 Start: 66194, Stop: 66865, Start Num: 32

Candidate Starts for Mareelih_106:

(Start: 32 @66194 has 8 MA's), (38, 66236), (60, 66293), (67, 66356), (80, 66446), (82, 66458), (130, 66740), (132, 66749), (133, 66752),

Gene: Marietta_49 Start: 34568, Stop: 35200, Start Num: 49

Candidate Starts for Marietta_49:

(Start: 36 @34517 has 1 MA's), (Start: 41 @34535 has 1 MA's), (Start: 45 @34562 has 1 MA's), (Start: 49 @34568 has 34 MA's), (Start: 66 @34649 has 2 MA's), (72, 34682), (74, 34697), (102, 34883), (103, 34886), (127, 35039), (132, 35063), (151, 35153),

Gene: MerCougar_49 Start: 37991, Stop: 38623, Start Num: 49

Candidate Starts for MerCougar_49:

(28, 37880), (Start: 41 @37958 has 1 MA's), (Start: 49 @37991 has 34 MA's), (62, 38027), (Start: 66 @38072 has 2 MA's), (74, 38120), (88, 38216), (102, 38306), (103, 38309), (127, 38462), (132, 38486), (139, 38528), (151, 38576),

Gene: Miskis_51 Start: 31103, Stop: 31744, Start Num: 55

Candidate Starts for Miskis_51:

(Start: 55 @31103 has 14 MA's), (59, 31112), (74, 31220), (90, 31322), (99, 31406), (109, 31469), (124, 31562), (127, 31583),

Gene: ModicumRichard_27 Start: 24665, Stop: 25339, Start Num: 32

Candidate Starts for ModicumRichard_27:

(16, 24491), (18, 24536), (Start: 32 @24665 has 8 MA's), (50, 24737), (60, 24758), (Start: 66 @24815 has 2 MA's), (67, 24821), (82, 24923), (99, 25025), (110, 25097), (112, 25106), (118, 25151), (127, 25199), (130, 25214), (136, 25250), (155, 25316),

Gene: Mollymur_32 Start: 30200, Stop: 30847, Start Num: 52

Candidate Starts for Mollymur_32:

(Start: 52 @30200 has 4 MA's), (65, 30242), (67, 30284), (68, 30287), (69, 30290), (71, 30305), (99, 30512), (109, 30575), (111, 30590), (114, 30608), (132, 30713), (144, 30770),

Gene: Morgana_27 Start: 24414, Stop: 25094, Start Num: 31

Candidate Starts for Morgana_27:

(3, 23391), (4, 23601), (6, 23676), (12, 23841), (21, 24318), (29, 24390), (Start: 31 @24414 has 1 MA's), (50, 24492), (60, 24513), (67, 24576), (82, 24678), (99, 24780), (102, 24795), (110, 24852),

(112, 24861), (118, 24906), (127, 24954), (130, 24969), (136, 25005), (155, 25071),

Gene: Mulch_29 Start: 24808, Stop: 25626, Start Num: 54

Candidate Starts for Mulch_29:

(10, 24118), (14, 24439), (Start: 54 @24808 has 31 MA's), (68, 24892), (75, 24934), (77, 24964), (82, 25027), (90, 25072), (104, 25177), (115, 25261), (121, 25294), (158, 25468),

Gene: Nadeem_29 Start: 24808, Stop: 25626, Start Num: 54

Candidate Starts for Nadeem_29:

(10, 24118), (14, 24439), (Start: 54 @24808 has 31 MA's), (68, 24892), (75, 24934), (77, 24964), (82, 25027), (90, 25072), (104, 25177), (115, 25261), (121, 25294), (158, 25468),

Gene: NadineRae_47 Start: 33815, Stop: 34447, Start Num: 49

Candidate Starts for NadineRae_47:

(Start: 36 @33764 has 1 MA's), (Start: 41 @33782 has 1 MA's), (Start: 45 @33809 has 1 MA's), (Start: 49 @33815 has 34 MA's), (Start: 66 @33896 has 2 MA's), (67, 33902), (69, 33908), (74, 33944), (102, 34130), (103, 34133), (127, 34286), (131, 34304), (132, 34310), (142, 34364),

Gene: NancyRae_29 Start: 24814, Stop: 25635, Start Num: 54

Candidate Starts for NancyRae_29:

(10, 24124), (14, 24445), (Start: 54 @24814 has 31 MA's), (68, 24898), (75, 24940), (77, 24970), (82, 25033), (90, 25078), (104, 25183), (115, 25267), (121, 25300), (158, 25477),

Gene: NatB6_47 Start: 36785, Stop: 37417, Start Num: 49

Candidate Starts for NatB6_47:

(46, 36779), (Start: 49 @36785 has 34 MA's), (57, 36800), (58, 36803), (59, 36806), (62, 36821), (Start: 66 @36866 has 2 MA's), (67, 36872), (74, 36914), (78, 36938), (88, 37010), (102, 37100), (103, 37103), (119, 37214), (127, 37256), (132, 37280), (139, 37322), (151, 37370),

Gene: Neville_34 Start: 29543, Stop: 30208, Start Num: 66

Candidate Starts for Neville_34:

(Start: 54 @29471 has 31 MA's), (Start: 66 @29543 has 2 MA's), (74, 29588), (76, 29600), (80, 29636), (84, 29663), (88, 29684), (89, 29687), (98, 29753), (101, 29777), (113, 29855), (114, 29867), (115, 29876), (121, 29909), (127, 29951), (129, 29957), (132, 29975), (137, 30005), (138, 30008), (146, 30035), (150, 30047), (161, 30080), (162, 30089), (163, 30101), (169, 30146), (171, 30161), (172, 30164), (173, 30173), (174, 30191), (175, 30194),

Gene: Norvs_50 Start: 31342, Stop: 31983, Start Num: 55

Candidate Starts for Norvs_50:

(Start: 55 @31342 has 14 MA's), (59, 31351), (74, 31459), (90, 31561), (92, 31573), (99, 31645), (109, 31708), (124, 31801), (127, 31822), (149, 31921),

Gene: NosilaM_51 Start: 37686, Stop: 38318, Start Num: 49

Candidate Starts for NosilaM_51:

(Start: 41 @37653 has 1 MA's), (Start: 49 @37686 has 34 MA's), (62, 37722), (Start: 66 @37767 has 2 MA's), (74, 37815), (88, 37911), (102, 38001), (103, 38004), (119, 38115), (132, 38181), (151, 38271), (156, 38286),

Gene: NovumRegina_47 Start: 37094, Stop: 37726, Start Num: 49

Candidate Starts for NovumRegina_47:

(46, 37088), (Start: 49 @37094 has 34 MA's), (57, 37109), (58, 37112), (59, 37115), (62, 37130), (Start: 66 @37175 has 2 MA's), (67, 37181), (74, 37223), (78, 37247), (88, 37319), (102, 37409), (103, 37412), (119, 37523), (127, 37565), (132, 37589), (139, 37631), (151, 37679),

Gene: ODay_27 Start: 20764, Stop: 21465, Start Num: 54

Candidate Starts for ODay_27:

(43, 20734), (Start: 54 @20764 has 31 MA's), (75, 20890), (82, 20947), (84, 20962), (85, 20968), (87, 20977), (99, 21070), (101, 21076), (106, 21115), (112, 21151), (113, 21154), (115, 21175), (121, 21202), (127, 21244), (131, 21262), (143, 21316), (150, 21343), (168, 21415),

Gene: ObLaDi_27 Start: 24644, Stop: 25318, Start Num: 32

Candidate Starts for ObLaDi_27:

(16, 24470), (18, 24515), (Start: 32 @24644 has 8 MA's), (50, 24716), (60, 24737), (Start: 66 @24794 has 2 MA's), (67, 24800), (82, 24902), (99, 25004), (110, 25076), (112, 25085), (118, 25130), (127, 25178), (130, 25193), (136, 25229), (155, 25295),

Gene: Octobien14_35 Start: 28887, Stop: 29606, Start Num: 54

Candidate Starts for Octobien14_35:

(Start: 54 @28887 has 31 MA's), (Start: 66 @28962 has 2 MA's), (74, 29007), (76, 29019), (80, 29055), (86, 29091), (88, 29103), (94, 29148), (101, 29196), (114, 29286), (115, 29295), (121, 29328), (127, 29370), (137, 29424), (156, 29493), (163, 29526), (164, 29529), (172, 29565), (175, 29592),

Gene: OneUp_43 Start: 28776, Stop: 29381, Start Num: 55

Candidate Starts for OneUp_43:

(Start: 55 @28776 has 14 MA's), (67, 28851), (74, 28893), (82, 28953), (90, 28995), (96, 29046), (99, 29079), (107, 29136), (109, 29142), (128, 29259),

Gene: Outis_49 Start: 37685, Stop: 38317, Start Num: 49

Candidate Starts for Outis_49:

(28, 37574), (Start: 41 @37652 has 1 MA's), (Start: 49 @37685 has 34 MA's), (62, 37721), (Start: 66 @37766 has 2 MA's), (74, 37814), (88, 37910), (102, 38000), (103, 38003), (132, 38180), (139, 38222), (151, 38270),

Gene: Parada_29 Start: 24808, Stop: 25626, Start Num: 54

Candidate Starts for Parada_29:

(10, 24118), (14, 24439), (Start: 54 @24808 has 31 MA's), (68, 24892), (75, 24934), (77, 24964), (82, 25027), (90, 25072), (104, 25177), (115, 25261), (121, 25294), (158, 25468),

Gene: Patio_51 Start: 37940, Stop: 38572, Start Num: 49

Candidate Starts for Patio_51:

(Start: 49 @37940 has 34 MA's), (62, 37976), (Start: 66 @38021 has 2 MA's), (74, 38069), (78, 38093), (88, 38165), (102, 38255), (103, 38258), (119, 38369), (127, 38411), (132, 38435), (151, 38525),

Gene: Pepperoni_18 Start: 16807, Stop: 17460, Start Num: 54

Candidate Starts for Pepperoni_18:

(25, 16654), (Start: 45 @16792 has 1 MA's), (Start: 54 @16807 has 31 MA's), (73, 16927), (82, 17014), (99, 17137), (102, 17152), (104, 17161), (122, 17281), (130, 17332), (152, 17422),

Gene: PhinkBoden_49 Start: 31723, Stop: 32364, Start Num: 55

Candidate Starts for PhinkBoden_49:

(Start: 55 @31723 has 14 MA's), (59, 31732), (74, 31840), (90, 31942), (99, 32026), (109, 32089), (124, 32182), (127, 32203),

Gene: Phistory_23 Start: 19454, Stop: 20152, Start Num: 54

Candidate Starts for Phistory_23:

(43, 19424), (Start: 54 @19454 has 31 MA's), (73, 19574), (74, 19577), (82, 19637), (84, 19652), (87, 19667), (99, 19760), (101, 19766), (106, 19805), (112, 19841), (115, 19865), (121, 19892), (127, 19934), (131, 19952),

Gene: Phomeo_46 Start: 37363, Stop: 37995, Start Num: 49

Candidate Starts for Phomeo_46:

(46, 37357), (Start: 49 @37363 has 34 MA's), (57, 37378), (58, 37381), (59, 37384), (62, 37399), (Start: 66 @37444 has 2 MA's), (67, 37450), (74, 37492), (78, 37516), (88, 37588), (102, 37678), (103, 37681), (119, 37792), (127, 37834), (132, 37858), (139, 37900), (151, 37948),

Gene: Pimento_28 Start: 24283, Stop: 25104, Start Num: 54

Candidate Starts for Pimento_28:

(10, 23593), (14, 23914), (Start: 54 @24283 has 31 MA's), (68, 24367), (75, 24409), (77, 24439), (82, 24502), (90, 24547), (104, 24652), (115, 24736), (121, 24769), (158, 24946),

Gene: Pleakley_55 Start: 36899, Stop: 37522, Start Num: 49

Candidate Starts for Pleakley_55:

(Start: 49 @36899 has 34 MA's), (Start: 66 @36980 has 2 MA's), (74, 37028), (83, 37091), (102, 37220), (115, 37307), (130, 37391), (132, 37400),

Gene: Pupper_171 Start: 124952, Stop: 125620, Start Num: 51

Candidate Starts for Pupper_171:

(Start: 51 @124952 has 3 MA's), (Start: 54 @124958 has 31 MA's), (68, 125042), (82, 125165), (99, 125291), (115, 125399),

Gene: REQ3_52 Start: 34473, Stop: 35225, Start Num: 54

Candidate Starts for REQ3_52:

(Start: 54 @34473 has 31 MA's), (67, 34554), (82, 34656), (88, 34695), (90, 34701), (98, 34764), (101, 34788), (105, 34827), (114, 34878), (115, 34887), (117, 34902), (127, 34956), (145, 35046), (155, 35082), (166, 35133), (170, 35166),

Gene: Rabbitrun_36 Start: 29920, Stop: 30669, Start Num: 48

Candidate Starts for Rabbitrun_36:

(Start: 48 @29920 has 1 MA's), (Start: 54 @29932 has 31 MA's), (59, 29944), (Start: 66 @30004 has 2 MA's), (76, 30061), (80, 30097), (81, 30100), (85, 30130), (98, 30214), (104, 30256), (114, 30328), (115, 30337), (116, 30352), (121, 30370), (127, 30412), (129, 30418), (132, 30436), (138, 30469), (146, 30496), (150, 30508), (153, 30517), (156, 30529), (157, 30535), (159, 30538), (161, 30541), (163, 30562), (169, 30607), (171, 30622), (173, 30634), (175, 30655),

Gene: RavenCo17_18 Start: 17341, Stop: 17994, Start Num: 54

Candidate Starts for RavenCo17_18:

(Start: 45 @17323 has 1 MA's), (Start: 54 @17341 has 31 MA's), (82, 17548), (95, 17641), (99, 17671), (102, 17686), (130, 17866), (152, 17956),

Gene: RayTheFireFly_21 Start: 19801, Stop: 20454, Start Num: 54

Candidate Starts for RayTheFireFly_21:

(Start: 54 @19801 has 31 MA's), (73, 19921), (82, 20008), (95, 20101), (99, 20131), (102, 20146), (104, 20155), (130, 20326), (152, 20416),

Gene: SCentae_170 Start: 125145, Stop: 125813, Start Num: 51

Candidate Starts for SCentae_170:

(Start: 51 @125145 has 3 MA's), (Start: 54 @125151 has 31 MA's), (68, 125235), (82, 125358), (99, 125484), (115, 125592),

Gene: Sephiroth_34 Start: 28371, Stop: 29090, Start Num: 54

Candidate Starts for Sephiroth_34:

(Start: 54 @28371 has 31 MA's), (74, 28491), (76, 28503), (84, 28566), (86, 28575), (88, 28587), (94, 28632), (101, 28680), (114, 28770), (115, 28779), (121, 28812), (123, 28821), (127, 28854), (137, 28908), (138, 28911), (156, 28977), (163, 29010), (172, 29049), (175, 29076),

Gene: Sixama_106 Start: 66201, Stop: 66872, Start Num: 32

Candidate Starts for Sixama_106:

(Start: 32 @66201 has 8 MA's), (60, 66300), (61, 66303), (67, 66363), (80, 66453), (130, 66747), (132, 66756), (143, 66804), (157, 66858),

Gene: Skog_3 Start: 1528, Stop: 2187, Start Num: 54

Candidate Starts for Skog_3:

(Start: 54 @1528 has 31 MA's), (58, 1540), (82, 1735), (93, 1795), (99, 1861), (141, 2116),

Gene: Skysand_50 Start: 38160, Stop: 38792, Start Num: 49

Candidate Starts for Skysand_50:

(Start: 49 @38160 has 34 MA's), (62, 38196), (Start: 66 @38241 has 2 MA's), (67, 38247), (74, 38289), (78, 38313), (102, 38475), (115, 38562), (119, 38589), (127, 38631), (132, 38655), (139, 38697), (151, 38745),

Gene: Smoothie_50 Start: 31340, Stop: 31981, Start Num: 55

Candidate Starts for Smoothie_50:

(Start: 55 @31340 has 14 MA's), (59, 31349), (74, 31457), (90, 31559), (99, 31643), (109, 31706), (110, 31715), (124, 31799), (127, 31820), (151, 31928),

Gene: SpeedDemon_330 Start: 30855, Stop: 31499, Start Num: 52

Candidate Starts for SpeedDemon_330:

(34, 30807), (Start: 52 @30855 has 4 MA's), (Start: 66 @30930 has 2 MA's), (67, 30936), (72, 30963), (97, 31134), (99, 31164), (100, 31167), (107, 31221), (109, 31227), (132, 31365), (134, 31371), (149, 31440),

Gene: StarStruck_49 Start: 37685, Stop: 38317, Start Num: 49

Candidate Starts for StarStruck_49:

(28, 37574), (Start: 41 @37652 has 1 MA's), (Start: 49 @37685 has 34 MA's), (62, 37721), (Start: 66 @37766 has 2 MA's), (74, 37814), (88, 37910), (102, 38000), (103, 38003), (132, 38180), (139, 38222), (151, 38270),

Gene: Sukkupi_48 Start: 36121, Stop: 36753, Start Num: 49

Candidate Starts for Sukkupi_48:

(Start: 36 @36070 has 1 MA's), (Start: 41 @36088 has 1 MA's), (Start: 45 @36115 has 1 MA's), (Start: 49 @36121 has 34 MA's), (Start: 66 @36202 has 2 MA's), (72, 36235), (74, 36250), (102, 36436), (103, 36439), (127, 36592), (132, 36616), (142, 36670),

Gene: SuperSulley_49 Start: 37820, Stop: 38485, Start Num: 41

Candidate Starts for SuperSulley_49:

(Start: 41 @37820 has 1 MA's), (Start: 49 @37853 has 34 MA's), (58, 37871), (62, 37889), (Start: 66 @37934 has 2 MA's), (74, 37982), (88, 38078), (102, 38168), (103, 38171), (119, 38282), (132, 38348), (151, 38438),

Gene: Syleon_34 Start: 28293, Stop: 29012, Start Num: 54

Candidate Starts for Syleon_34:

(Start: 54 @28293 has 31 MA's), (74, 28413), (76, 28425), (80, 28461), (84, 28488), (86, 28497), (88, 28509), (94, 28554), (101, 28602), (114, 28692), (115, 28701), (121, 28734), (123, 28743), (127, 28776), (137, 28830), (138, 28833), (156, 28899), (163, 28932), (164, 28935), (172, 28971), (175, 28998),

Gene: Toniann_49 Start: 31285, Stop: 31926, Start Num: 55

Candidate Starts for Toniann_49:

(Start: 55 @31285 has 14 MA's), (59, 31294), (74, 31402), (90, 31504), (99, 31588), (109, 31651), (124, 31744), (127, 31765),

Gene: Tracker_47 Start: 36512, Stop: 37144, Start Num: 49

Candidate Starts for Tracker_47:

(46, 36506), (Start: 49 @36512 has 34 MA's), (57, 36527), (58, 36530), (59, 36533), (Start: 66 @36593 has 2 MA's), (67, 36599), (74, 36641), (78, 36665), (88, 36737), (102, 36827), (119, 36941), (127, 36983), (132, 37007), (139, 37049), (151, 37097),

Gene: Trax_34 Start: 29849, Stop: 30514, Start Num: 66

Candidate Starts for Trax_34:

(Start: 54 @29777 has 31 MA's), (Start: 66 @29849 has 2 MA's), (74, 29894), (76, 29906), (80, 29942), (84, 29969), (88, 29990), (89, 29993), (98, 30059), (101, 30083), (113, 30161), (114, 30173), (115, 30182), (121, 30215), (127, 30257), (129, 30263), (132, 30281), (137, 30311), (138, 30314), (146, 30341), (150, 30353), (161, 30386), (162, 30395), (163, 30407), (169, 30452), (171, 30467), (172, 30470), (173, 30479), (174, 30497), (175, 30500),

Gene: Turuncu_52 Start: 38087, Stop: 38719, Start Num: 49

Candidate Starts for Turuncu_52:

(22, 37913), (26, 37943), (Start: 47 @38081 has 1 MA's), (Start: 49 @38087 has 34 MA's), (62, 38123), (Start: 66 @38168 has 2 MA's), (74, 38216), (88, 38312), (102, 38402), (119, 38516), (132, 38582), (151, 38672),

Gene: WheatThin_29 Start: 24808, Stop: 25626, Start Num: 54

Candidate Starts for WheatThin_29:

(10, 24118), (14, 24439), (Start: 54 @24808 has 31 MA's), (68, 24892), (75, 24934), (77, 24964), (82, 25027), (90, 25072), (104, 25177), (115, 25261), (121, 25294), (158, 25468),

Gene: Wheezy_47 Start: 36717, Stop: 37349, Start Num: 49

Candidate Starts for Wheezy_47:

(46, 36711), (Start: 49 @36717 has 34 MA's), (57, 36732), (58, 36735), (59, 36738), (62, 36753), (Start: 66 @36798 has 2 MA's), (67, 36804), (74, 36846), (78, 36870), (88, 36942), (102, 37032), (103, 37035), (119, 37146), (127, 37188), (132, 37212), (139, 37254), (151, 37302),

Gene: WhoseManz_48 Start: 34130, Stop: 34813, Start Num: 36

Candidate Starts for WhoseManz_48:

(Start: 36 @34130 has 1 MA's), (Start: 41 @34148 has 1 MA's), (Start: 45 @34175 has 1 MA's), (Start: 49 @34181 has 34 MA's), (Start: 66 @34262 has 2 MA's), (72, 34295), (74, 34310), (102, 34496), (127, 34652), (132, 34676), (151, 34766),

Gene: WilliamBoone_49 Start: 30649, Stop: 31290, Start Num: 55

Candidate Starts for WilliamBoone_49:

(Start: 55 @30649 has 14 MA's), (59, 30658), (74, 30766), (90, 30868), (99, 30952), (109, 31015), (124, 31108), (127, 31129), (149, 31228),

Gene: Wocket_21 Start: 18497, Stop: 19231, Start Num: 54

Candidate Starts for Wocket_21:

(Start: 54 @18497 has 31 MA's), (59, 18512), (64, 18533), (88, 18743), (90, 18749), (97, 18803), (99, 18830), (102, 18845), (106, 18875), (113, 18914), (115, 18935), (120, 18962), (140, 19067), (164, 19166), (167, 19199),

Gene: Yndexa_48 Start: 36121, Stop: 36753, Start Num: 49

Candidate Starts for Yndexa_48:

(Start: 36 @36070 has 1 MA's), (Start: 41 @36088 has 1 MA's), (Start: 45 @36115 has 1 MA's), (Start: 49 @36121 has 34 MA's), (Start: 66 @36202 has 2 MA's), (72, 36235), (74, 36250), (102, 36436), (103, 36439), (127, 36592), (132, 36616), (142, 36670),

Gene: ZAYM_21 Start: 19251, Stop: 20018, Start Num: 52

Candidate Starts for ZAYM_21:

(19, 18993), (24, 19077), (28, 19125), (Start: 52 @19251 has 4 MA's), (61, 19275), (Start: 66 @19329 has 2 MA's), (67, 19335), (72, 19362), (74, 19377), (99, 19560), (113, 19641), (115, 19662), (119, 19689), (133, 19758), (144, 19812), (151, 19839), (165, 19896),