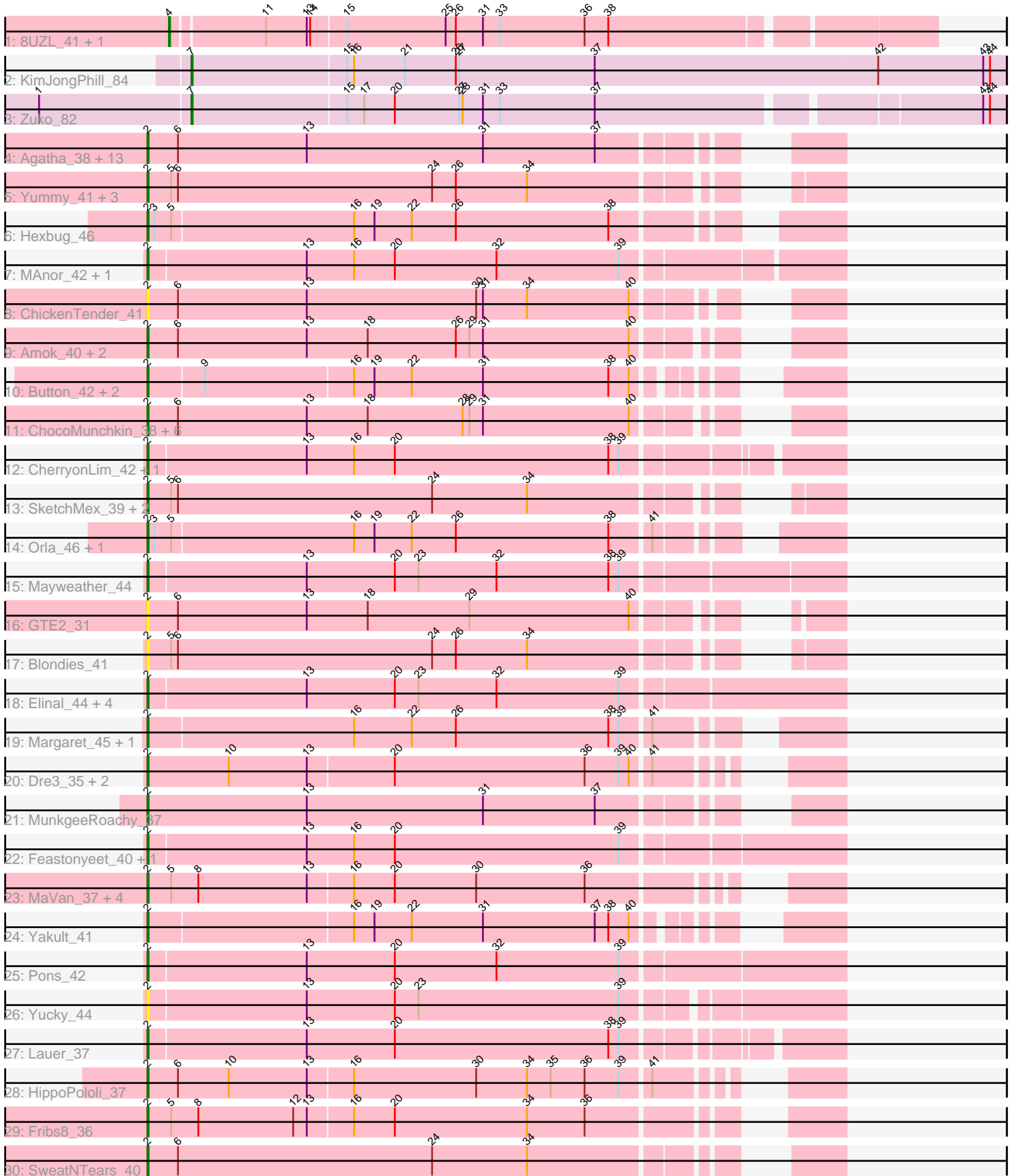


Pham 200215



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 200215 Report

This analysis was run 01/18/25 on database version 583.

Pham number 200215 has 74 members, 17 are drafts.

Phages represented in each track:

- Track 1 : 8UZL_41, Maco6_39
- Track 2 : KimJongPhill_84
- Track 3 : Zuko_82
- Track 4 : Agatha_38, Elliott_39, Nina_38, Cozz_37, Quasar_39, RedBaron_41, PsychoKiller_38, Sopespian_38, Typhonmarchy_38, Axym_38, GoldHunter_40, Burnsey_38, Carsonalex_42, Starburst_40
- Track 5 : Yummy_41, Buttrmlkdreams_41, MScarn_42, Horseradish_41
- Track 6 : Hexbug_46
- Track 7 : MAnor_42, PotPie_41
- Track 8 : ChickenTender_41
- Track 9 : Amok_40, AikoCarson_40, Emalyn_39
- Track 10 : Button_42, GiKK_44, Jamzy_44
- Track 11 : ChocoMunchkin_38, Yarn_36, Tolls_40, CanesSauce_38, BillDoor_39, AndPeggy_36, SteamedHams_40
- Track 12 : CherryonLim_42, SheckWes_43
- Track 13 : SketchMex_39, Troje_41, Biskit_41
- Track 14 : Orla_46, Nodigi_46
- Track 15 : Mayweather_44
- Track 16 : GTE2_31
- Track 17 : Blondies_41
- Track 18 : Elinal_44, KayGee_42, Vine_43, Bavilard_40, SummitAcademy_40
- Track 19 : Margaret_45, RanchParmCat_44
- Track 20 : Dre3_35, Cleo_35, Gibbous_35
- Track 21 : MunkgeeRoachy_37
- Track 22 : Feastonyeet_40, BigChungus_40
- Track 23 : MaVan_37, Nibbles_36, Survivors_37, Zareef_39, Azira_37
- Track 24 : Yakult_41
- Track 25 : Pons_42
- Track 26 : Yucky_44
- Track 27 : Lauer_37
- Track 28 : HippoPololi_37
- Track 29 : Fribs8_36
- Track 30 : SweatNTears_40

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

The start number called the most often in the published annotations is 2, it was called in 54 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha_38, AikoCarson_40, Amok_40, AndPeggy_36, Axym_38, Azira_37, Bavailard_40, BigChungus_40, BillDoor_39, Biskit_41, Blondies_41, Burnsey_38, Button_42, Buttrmlkdreams_41, CanesSauce_38, Carsonalex_42, CherryonLim_42, ChickenTender_41, ChocoMunchkin_38, Cleo_35, Cozz_37, Dre3_35, Elinal_44, Elliott_39, Emalyn_39, Feastonyeet_40, Fribs8_36, GTE2_31, GiKK_44, Gibbous_35, GoldHunter_40, Hexbug_46, HippoPololi_37, Horseradish_41, Jamzy_44, KayGee_42, Lauer_37, MAnor_42, MScarn_42, MaVan_37, Margaret_45, Mayweather_44, MunkgeeRoachy_37, Nibbles_36, Nina_38, Nodigi_46, Orla_46, Pons_42, PotPie_41, PsychoKiller_38, Quasar_39, RanchParmCat_44, RedBaron_41, SheckWes_43, SketchMex_39, Sopespian_38, Starburst_40, SteamedHams_40, SummitAcademy_40, Survivors_37, SweatNTears_40, Tolls_40, Troje_41, Typhonmarchy_38, Vine_43, Yakult_41, Yarn_36, Yucky_44, Yummy_41, Zareef_39,

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

-

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

- 8UZL_41, KimJongPhill_84, Maco6_39, Zuko_82,

Summary by start number:

Start 2:

- Found in 70 of 74 (94.6%) of genes in pham
- Manual Annotations of this start: 54 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agatha_38 (CT), AikoCarson_40 (CT), Amok_40 (CT), AndPeggy_36 (CT), Axym_38 (CT), Azira_37 (CT), Bavailard_40 (CT), BigChungus_40 (CT), BillDoor_39 (CT), Biskit_41 (CT), Blondies_41 (CT), Burnsey_38 (CT), Button_42 (CT), Buttrmlkdreams_41 (CT), CanesSauce_38 (CT), Carsonalex_42 (CT), CherryonLim_42 (CT), ChickenTender_41 (CT), ChocoMunchkin_38 (CT), Cleo_35 (CT), Cozz_37 (CT), Dre3_35 (CT), Elinal_44 (CT), Elliott_39 (CT), Emalyn_39 (CT), Feastonyeet_40 (CT), Fribs8_36 (CT), GTE2_31 (CT), GiKK_44 (CT), Gibbous_35 (CT), GoldHunter_40 (CT), Hexbug_46 (CT), HippoPololi_37 (CT), Horseradish_41 (CT), Jamzy_44 (CT), KayGee_42 (CT), Lauer_37 (CT), MAnor_42 (CT), MScarn_42 (CT), MaVan_37 (CT), Margaret_45 (CT), Mayweather_44 (CT), MunkgeeRoachy_37 (CT), Nibbles_36 (CT), Nina_38 (CT), Nodigi_46 (CT), Orla_46 (CT), Pons_42 (CT), PotPie_41 (CT), PsychoKiller_38 (CT), Quasar_39 (CT), RanchParmCat_44 (CT), RedBaron_41 (CT), SheckWes_43 (CT), SketchMex_39 (CT), Sopespian_38 (CT), Starburst_40 (CT), SteamedHams_40 (CT), SummitAcademy_40 (CT), Survivors_37 (CT), SweatNTears_40 (CT), Tolls_40 (CT), Troje_41 (CT), Typhonmarchy_38 (CT), Vine_43 (CT), Yakult_41 (CT), Yarn_36 (CT), Yucky_44 (CT), Yummy_41 (CT), Zareef_39 (CT),

Start 4:

- Found in 2 of 74 (2.7%) 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: 8UZL_41 (AB), Maco6_39 (AB),

Start 7:

- Found in 2 of 74 (2.7%) of genes in pham
- Manual Annotations of this start: 2 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill_84 (BR), Zuko_82 (BR),

Summary by clusters:

There are 3 clusters represented in this pham: AB, BR, CT,

Info for manual annotations of cluster AB:

- Start number 4 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster BR:

- Start number 7 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:

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

Gene Information:

Gene: 8UZL_41 Start: 30093, Stop: 29446, Start Num: 4

Candidate Starts for 8UZL_41:

(Start: 4 @30093 has 1 MA's), (11, 30015), (13, 29979), (14, 29976), (15, 29946), (25, 29859), (26, 29850), (31, 29826), (33, 29811), (36, 29736), (38, 29715),

Gene: Agatha_38 Start: 27790, Stop: 27239, Start Num: 2

Candidate Starts for Agatha_38:

(Start: 2 @27790 has 54 MA's), (6, 27763), (13, 27649), (31, 27493), (37, 27394),

Gene: AikoCarson_40 Start: 28146, Stop: 27598, Start Num: 2

Candidate Starts for AikoCarson_40:

(Start: 2 @28146 has 54 MA's), (6, 28119), (13, 28005), (18, 27951), (26, 27873), (29, 27861), (31, 27849), (40, 27720),

Gene: Amok_40 Start: 28170, Stop: 27622, Start Num: 2

Candidate Starts for Amok_40:

(Start: 2 @28170 has 54 MA's), (6, 28143), (13, 28029), (18, 27975), (26, 27897), (29, 27885), (31, 27873), (40, 27744),

Gene: AndPeggy_36 Start: 27570, Stop: 27022, Start Num: 2

Candidate Starts for AndPeggy_36:

(Start: 2 @27570 has 54 MA's), (6, 27543), (13, 27429), (18, 27375), (28, 27291), (29, 27285), (31, 27273), (40, 27144),

Gene: Axym_38 Start: 27768, Stop: 27217, Start Num: 2

Candidate Starts for Axym_38:

(Start: 2 @27768 has 54 MA's), (6, 27741), (13, 27627), (31, 27471), (37, 27372),

Gene: Azira_37 Start: 27822, Stop: 27271, Start Num: 2
Candidate Starts for Azira_37:
(Start: 2 @27822 has 54 MA's), (5, 27801), (8, 27777), (13, 27681), (16, 27642), (20, 27606), (30, 27534), (36, 27438),

Gene: Bavilard_40 Start: 29201, Stop: 28599, Start Num: 2
Candidate Starts for Bavilard_40:
(Start: 2 @29201 has 54 MA's), (13, 29063), (20, 28985), (23, 28964), (32, 28895), (39, 28787),

Gene: BigChungus_40 Start: 29381, Stop: 28782, Start Num: 2
Candidate Starts for BigChungus_40:
(Start: 2 @29381 has 54 MA's), (13, 29243), (16, 29201), (20, 29165), (39, 28967),

Gene: BillDoor_39 Start: 27241, Stop: 26699, Start Num: 2
Candidate Starts for BillDoor_39:
(Start: 2 @27241 has 54 MA's), (6, 27214), (13, 27100), (18, 27046), (28, 26962), (29, 26956), (31, 26944), (40, 26815),

Gene: Biskit_41 Start: 27935, Stop: 27390, Start Num: 2
Candidate Starts for Biskit_41:
(Start: 2 @27935 has 54 MA's), (5, 27914), (6, 27908), (24, 27683), (34, 27599),

Gene: Blondies_41 Start: 28251, Stop: 27706, Start Num: 2
Candidate Starts for Blondies_41:
(Start: 2 @28251 has 54 MA's), (5, 28230), (6, 28224), (24, 27999), (26, 27978), (34, 27915),

Gene: Burnsey_38 Start: 27781, Stop: 27230, Start Num: 2
Candidate Starts for Burnsey_38:
(Start: 2 @27781 has 54 MA's), (6, 27754), (13, 27640), (31, 27484), (37, 27385),

Gene: Button_42 Start: 28421, Stop: 27879, Start Num: 2
Candidate Starts for Button_42:
(Start: 2 @28421 has 54 MA's), (9, 28373), (16, 28244), (19, 28226), (22, 28193), (31, 28130), (38, 28019), (40, 28001),

Gene: Buttrmlkdreams_41 Start: 28267, Stop: 27722, Start Num: 2
Candidate Starts for Buttrmlkdreams_41:
(Start: 2 @28267 has 54 MA's), (5, 28246), (6, 28240), (24, 28015), (26, 27994), (34, 27931),

Gene: CanesSauce_38 Start: 27743, Stop: 27195, Start Num: 2
Candidate Starts for CanesSauce_38:
(Start: 2 @27743 has 54 MA's), (6, 27716), (13, 27602), (18, 27548), (28, 27464), (29, 27458), (31, 27446), (40, 27317),

Gene: Carsonalex_42 Start: 27818, Stop: 27267, Start Num: 2
Candidate Starts for Carsonalex_42:
(Start: 2 @27818 has 54 MA's), (6, 27791), (13, 27677), (31, 27521), (37, 27422),

Gene: CherryonLim_42 Start: 30519, Stop: 29932, Start Num: 2
Candidate Starts for CherryonLim_42:
(Start: 2 @30519 has 54 MA's), (13, 30381), (16, 30339), (20, 30303), (38, 30114), (39, 30105),

Gene: ChickenTender_41 Start: 27551, Stop: 27003, Start Num: 2

Candidate Starts for ChickenTender_41:

(Start: 2 @27551 has 54 MA's), (6, 27524), (13, 27410), (30, 27260), (31, 27254), (34, 27215), (40, 27125),

Gene: ChocoMunchkin_38 Start: 27743, Stop: 27195, Start Num: 2

Candidate Starts for ChocoMunchkin_38:

(Start: 2 @27743 has 54 MA's), (6, 27716), (13, 27602), (18, 27548), (28, 27464), (29, 27458), (31, 27446), (40, 27317),

Gene: Cleo_35 Start: 27367, Stop: 26819, Start Num: 2

Candidate Starts for Cleo_35:

(Start: 2 @27367 has 54 MA's), (10, 27295), (13, 27226), (20, 27151), (36, 26983), (39, 26953), (40, 26944), (41, 26929),

Gene: Cozz_37 Start: 27378, Stop: 26827, Start Num: 2

Candidate Starts for Cozz_37:

(Start: 2 @27378 has 54 MA's), (6, 27351), (13, 27237), (31, 27081), (37, 26982),

Gene: Dre3_35 Start: 27110, Stop: 26562, Start Num: 2

Candidate Starts for Dre3_35:

(Start: 2 @27110 has 54 MA's), (10, 27038), (13, 26969), (20, 26894), (36, 26726), (39, 26696), (40, 26687), (41, 26672),

Gene: Elinal_44 Start: 29769, Stop: 29167, Start Num: 2

Candidate Starts for Elinal_44:

(Start: 2 @29769 has 54 MA's), (13, 29631), (20, 29553), (23, 29532), (32, 29463), (39, 29355),

Gene: Elliott_39 Start: 27789, Stop: 27238, Start Num: 2

Candidate Starts for Elliott_39:

(Start: 2 @27789 has 54 MA's), (6, 27762), (13, 27648), (31, 27492), (37, 27393),

Gene: Emalyn_39 Start: 27338, Stop: 26793, Start Num: 2

Candidate Starts for Emalyn_39:

(Start: 2 @27338 has 54 MA's), (6, 27311), (13, 27197), (18, 27143), (26, 27065), (29, 27053), (31, 27041), (40, 26912),

Gene: Feastonyeet_40 Start: 29381, Stop: 28782, Start Num: 2

Candidate Starts for Feastonyeet_40:

(Start: 2 @29381 has 54 MA's), (13, 29243), (16, 29201), (20, 29165), (39, 28967),

Gene: Fribs8_36 Start: 27549, Stop: 26995, Start Num: 2

Candidate Starts for Fribs8_36:

(Start: 2 @27549 has 54 MA's), (5, 27528), (8, 27504), (12, 27420), (13, 27408), (16, 27369), (20, 27333), (34, 27216), (36, 27165),

Gene: GTE2_31 Start: 27554, Stop: 27012, Start Num: 2

Candidate Starts for GTE2_31:

(Start: 2 @27554 has 54 MA's), (6, 27527), (13, 27413), (18, 27359), (29, 27269), (40, 27128),

Gene: GiKK_44 Start: 28751, Stop: 28209, Start Num: 2

Candidate Starts for GiKK_44:

(Start: 2 @28751 has 54 MA's), (9, 28703), (16, 28574), (19, 28556), (22, 28523), (31, 28460), (38, 28349), (40, 28331),

Gene: Gibbous_35 Start: 27110, Stop: 26562, Start Num: 2
Candidate Starts for Gibbous_35:
(Start: 2 @27110 has 54 MA's), (10, 27038), (13, 26969), (20, 26894), (36, 26726), (39, 26696), (40, 26687), (41, 26672),

Gene: GoldHunter_40 Start: 27790, Stop: 27239, Start Num: 2
Candidate Starts for GoldHunter_40:
(Start: 2 @27790 has 54 MA's), (6, 27763), (13, 27649), (31, 27493), (37, 27394),

Gene: Hexbug_46 Start: 30533, Stop: 29970, Start Num: 2
Candidate Starts for Hexbug_46:
(Start: 2 @30533 has 54 MA's), (3, 30527), (5, 30512), (16, 30353), (19, 30335), (22, 30302), (26, 30263), (38, 30128),

Gene: HippoPololi_37 Start: 27564, Stop: 27016, Start Num: 2
Candidate Starts for HippoPololi_37:
(Start: 2 @27564 has 54 MA's), (6, 27537), (10, 27492), (13, 27423), (16, 27384), (30, 27276), (34, 27231), (35, 27210), (36, 27180), (39, 27150), (41, 27126),

Gene: Horseradish_41 Start: 27795, Stop: 27250, Start Num: 2
Candidate Starts for Horseradish_41:
(Start: 2 @27795 has 54 MA's), (5, 27774), (6, 27768), (24, 27543), (26, 27522), (34, 27459),

Gene: Jamzy_44 Start: 28734, Stop: 28192, Start Num: 2
Candidate Starts for Jamzy_44:
(Start: 2 @28734 has 54 MA's), (9, 28686), (16, 28557), (19, 28539), (22, 28506), (31, 28443), (38, 28332), (40, 28314),

Gene: KayGee_42 Start: 29769, Stop: 29167, Start Num: 2
Candidate Starts for KayGee_42:
(Start: 2 @29769 has 54 MA's), (13, 29631), (20, 29553), (23, 29532), (32, 29463), (39, 29355),

Gene: KimJongPhill_84 Start: 62747, Stop: 63463, Start Num: 7
Candidate Starts for KimJongPhill_84:
(Start: 7 @62747 has 2 MA's), (15, 62882), (16, 62888), (21, 62933), (26, 62978), (27, 62981), (37, 63101), (42, 63350), (43, 63443), (44, 63449),

Gene: Lauer_37 Start: 30578, Stop: 29997, Start Num: 2
Candidate Starts for Lauer_37:
(Start: 2 @30578 has 54 MA's), (13, 30440), (20, 30362), (38, 30173), (39, 30164),

Gene: MAnor_42 Start: 30111, Stop: 29515, Start Num: 2
Candidate Starts for MAnor_42:
(Start: 2 @30111 has 54 MA's), (13, 29973), (16, 29931), (20, 29895), (32, 29805), (39, 29697),

Gene: MScarn_42 Start: 27935, Stop: 27390, Start Num: 2
Candidate Starts for MScarn_42:
(Start: 2 @27935 has 54 MA's), (5, 27914), (6, 27908), (24, 27683), (26, 27662), (34, 27599),

Gene: MaVan_37 Start: 27851, Stop: 27303, Start Num: 2
Candidate Starts for MaVan_37:

(Start: 2 @27851 has 54 MA's), (5, 27830), (8, 27806), (13, 27710), (16, 27671), (20, 27635), (30, 27563), (36, 27467),

Gene: Maco6_39 Start: 29344, Stop: 28697, Start Num: 4

Candidate Starts for Maco6_39:

(Start: 4 @29344 has 1 MA's), (11, 29266), (13, 29230), (14, 29227), (15, 29197), (25, 29110), (26, 29101), (31, 29077), (33, 29062), (36, 28987), (38, 28966),

Gene: Margaret_45 Start: 29479, Stop: 28916, Start Num: 2

Candidate Starts for Margaret_45:

(Start: 2 @29479 has 54 MA's), (16, 29299), (22, 29248), (26, 29209), (38, 29074), (39, 29065), (41, 29041),

Gene: Mayweather_44 Start: 30390, Stop: 29791, Start Num: 2

Candidate Starts for Mayweather_44:

(Start: 2 @30390 has 54 MA's), (13, 30252), (20, 30174), (23, 30153), (32, 30084), (38, 29985), (39, 29976),

Gene: MunkgeeRoachy_37 Start: 27252, Stop: 26701, Start Num: 2

Candidate Starts for MunkgeeRoachy_37:

(Start: 2 @27252 has 54 MA's), (13, 27111), (31, 26955), (37, 26856),

Gene: Nibbles_36 Start: 27538, Stop: 26987, Start Num: 2

Candidate Starts for Nibbles_36:

(Start: 2 @27538 has 54 MA's), (5, 27517), (8, 27493), (13, 27397), (16, 27358), (20, 27322), (30, 27250), (36, 27154),

Gene: Nina_38 Start: 27914, Stop: 27363, Start Num: 2

Candidate Starts for Nina_38:

(Start: 2 @27914 has 54 MA's), (6, 27887), (13, 27773), (31, 27617), (37, 27518),

Gene: Nodigi_46 Start: 30519, Stop: 29959, Start Num: 2

Candidate Starts for Nodigi_46:

(Start: 2 @30519 has 54 MA's), (3, 30513), (5, 30498), (16, 30339), (19, 30321), (22, 30288), (26, 30249), (38, 30114), (41, 30081),

Gene: Orla_46 Start: 30492, Stop: 29932, Start Num: 2

Candidate Starts for Orla_46:

(Start: 2 @30492 has 54 MA's), (3, 30486), (5, 30471), (16, 30312), (19, 30294), (22, 30261), (26, 30222), (38, 30087), (41, 30054),

Gene: Pons_42 Start: 29741, Stop: 29139, Start Num: 2

Candidate Starts for Pons_42:

(Start: 2 @29741 has 54 MA's), (13, 29603), (20, 29525), (32, 29435), (39, 29327),

Gene: PotPie_41 Start: 30672, Stop: 30073, Start Num: 2

Candidate Starts for PotPie_41:

(Start: 2 @30672 has 54 MA's), (13, 30534), (16, 30492), (20, 30456), (32, 30366), (39, 30258),

Gene: PsychoKiller_38 Start: 27790, Stop: 27239, Start Num: 2

Candidate Starts for PsychoKiller_38:

(Start: 2 @27790 has 54 MA's), (6, 27763), (13, 27649), (31, 27493), (37, 27394),

Gene: Quasar_39 Start: 28338, Stop: 27787, Start Num: 2

Candidate Starts for Quasar_39:

(Start: 2 @28338 has 54 MA's), (6, 28311), (13, 28197), (31, 28041), (37, 27942),

Gene: RanchParmCat_44 Start: 29617, Stop: 29066, Start Num: 2

Candidate Starts for RanchParmCat_44:

(Start: 2 @29617 has 54 MA's), (16, 29437), (22, 29386), (26, 29347), (38, 29212), (39, 29203), (41, 29179),

Gene: RedBaron_41 Start: 28027, Stop: 27476, Start Num: 2

Candidate Starts for RedBaron_41:

(Start: 2 @28027 has 54 MA's), (6, 28000), (13, 27886), (31, 27730), (37, 27631),

Gene: SheckWes_43 Start: 29265, Stop: 28660, Start Num: 2

Candidate Starts for SheckWes_43:

(Start: 2 @29265 has 54 MA's), (13, 29127), (16, 29085), (20, 29049), (38, 28860), (39, 28851),

Gene: SketchMex_39 Start: 27935, Stop: 27390, Start Num: 2

Candidate Starts for SketchMex_39:

(Start: 2 @27935 has 54 MA's), (5, 27914), (6, 27908), (24, 27683), (34, 27599),

Gene: Sopespian_38 Start: 27791, Stop: 27240, Start Num: 2

Candidate Starts for Sopespian_38:

(Start: 2 @27791 has 54 MA's), (6, 27764), (13, 27650), (31, 27494), (37, 27395),

Gene: Starburst_40 Start: 27784, Stop: 27233, Start Num: 2

Candidate Starts for Starburst_40:

(Start: 2 @27784 has 54 MA's), (6, 27757), (13, 27643), (31, 27487), (37, 27388),

Gene: SteamedHams_40 Start: 27710, Stop: 27168, Start Num: 2

Candidate Starts for SteamedHams_40:

(Start: 2 @27710 has 54 MA's), (6, 27683), (13, 27569), (18, 27515), (28, 27431), (29, 27425), (31, 27413), (40, 27284),

Gene: SummitAcademy_40 Start: 29301, Stop: 28702, Start Num: 2

Candidate Starts for SummitAcademy_40:

(Start: 2 @29301 has 54 MA's), (13, 29163), (20, 29085), (23, 29064), (32, 28995), (39, 28887),

Gene: Survivors_37 Start: 27747, Stop: 27196, Start Num: 2

Candidate Starts for Survivors_37:

(Start: 2 @27747 has 54 MA's), (5, 27726), (8, 27702), (13, 27606), (16, 27567), (20, 27531), (30, 27459), (36, 27363),

Gene: SweatNTears_40 Start: 27687, Stop: 27136, Start Num: 2

Candidate Starts for SweatNTears_40:

(Start: 2 @27687 has 54 MA's), (6, 27660), (24, 27435), (34, 27351),

Gene: Tolls_40 Start: 27815, Stop: 27267, Start Num: 2

Candidate Starts for Tolls_40:

(Start: 2 @27815 has 54 MA's), (6, 27788), (13, 27674), (18, 27620), (28, 27536), (29, 27530), (31, 27518), (40, 27389),

Gene: Troje_41 Start: 28273, Stop: 27737, Start Num: 2

Candidate Starts for Troje_41:

(Start: 2 @28273 has 54 MA's), (5, 28252), (6, 28246), (24, 28021), (34, 27937),

Gene: Typhonomachy_38 Start: 27409, Stop: 26858, Start Num: 2

Candidate Starts for Typhonomachy_38:

(Start: 2 @27409 has 54 MA's), (6, 27382), (13, 27268), (31, 27112), (37, 27013),

Gene: Vine_43 Start: 30028, Stop: 29438, Start Num: 2

Candidate Starts for Vine_43:

(Start: 2 @30028 has 54 MA's), (13, 29890), (20, 29812), (23, 29791), (32, 29722), (39, 29614),

Gene: Yakult_41 Start: 28566, Stop: 28024, Start Num: 2

Candidate Starts for Yakult_41:

(Start: 2 @28566 has 54 MA's), (16, 28389), (19, 28371), (22, 28338), (31, 28275), (37, 28176), (38, 28164), (40, 28146),

Gene: Yarn_36 Start: 27575, Stop: 27027, Start Num: 2

Candidate Starts for Yarn_36:

(Start: 2 @27575 has 54 MA's), (6, 27548), (13, 27434), (18, 27380), (28, 27296), (29, 27290), (31, 27278), (40, 27149),

Gene: Yucky_44 Start: 29968, Stop: 29378, Start Num: 2

Candidate Starts for Yucky_44:

(Start: 2 @29968 has 54 MA's), (13, 29830), (20, 29752), (23, 29731), (39, 29554),

Gene: Yummy_41 Start: 27909, Stop: 27364, Start Num: 2

Candidate Starts for Yummy_41:

(Start: 2 @27909 has 54 MA's), (5, 27888), (6, 27882), (24, 27657), (26, 27636), (34, 27573),

Gene: Zareef_39 Start: 27841, Stop: 27290, Start Num: 2

Candidate Starts for Zareef_39:

(Start: 2 @27841 has 54 MA's), (5, 27820), (8, 27796), (13, 27700), (16, 27661), (20, 27625), (30, 27553), (36, 27457),

Gene: Zuko_82 Start: 62610, Stop: 63302, Start Num: 7

Candidate Starts for Zuko_82:

(1, 62478), (Start: 7 @62610 has 2 MA's), (15, 62745), (17, 62760), (20, 62787), (27, 62844), (28, 62847), (31, 62865), (33, 62880), (37, 62964), (43, 63282), (44, 63288),