

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 171508 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171508 has 54 members, 7 are drafts.

Phages represented in each track:

- Track 1 : JuJu_86
- Track 2 : StorminNorm_59, Saronaya_61, Gustavo_61
- Track 3 : Stultus_58
- Track 4 : Brandonk123_65
- Track 5 : Bibwit_61
- Track 6 : Nordenberg_58, Charming_63
- Track 7 : Sanjuju_59, Fitzgerald_58
- Track 8 : Lennon_62, Sitar_62
- Track 9 : Geodirt_61
- Track 10 : Paries_64
- Track 11 : ChadMasterC_62
- Track 12 : Gaea_61
- Track 13 : Sedona_60
- Track 14 : Tangerine_60, Baumdotcom_57
- Track 15 : BobBob_60
- Track 16 : Galadriel_61
- Track 17 : Angelicage_59, Affeca_59
- Track 18 : Shivanishola_59, Love_64
- Track 19 : Tangent_62, Fosterous_63, Kamashten_60, Thing3_60, Rofo_60
- Track 20 : McKinley_63
- Track 21 : JKSyngboy_59, Baddon_59
- Track 22 : MoontowerMania_60
- Track 23 : Barsten_62, RiverRaider_62
- Track 24 : Jabberwocky_59
- Track 25 : Keitabear_61
- Track 26 : SchottB_58
- Track 27 : Vivi2_65
- Track 28 : Ailee_58
- Track 29 : Kroos_59, Flatwoods_59
- Track 30 : Kewpiedoll_61
- Track 31 : Tycho_58
- Track 32 : Phinally_57, Leonard_57
- Track 33 : EMOore_56
- Track 34 : Phauci_50
- Track 35 : Inspectinfecti_58
- Track 36 : Ali17_55
- Track 37 : Hans_59

- Track 38 : MelBins_58

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 43 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca_59, Ailee_58, Ali17_55, Angelicage_59, Baddon_59, Barsten_62, Baumdotcom_57, Bibwit_61, BobBob_60, Brandonk123_65, ChadMasterC_62, Charming_63, Fitzgerald_58, Flatwoods_59, Fosterous_63, Gaea_61, Galadriel_61, Geodirt_61, Gustavo_61, Hans_59, JKSyngboy_59, Jabberwocky_59, Kamashten_60, Keitabear_61, Kewpiedoll_61, Kroos_59, Lennon_62, Love_64, McKinley_63, MelBins_58, MoontowerMania_60, Nordenberg_58, Paries_64, Phauci_50, RiverRaider_62, Rofo_60, Sanjuju_59, Saronaya_61, SchottB_58, Sedona_60, Shivanishola_59, Sitar_62, StorminNorm_59, Stultus_58, Tangent_62, Tangerine_60, Thing3_60, Tycho_58, Vivi2_65,

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

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

- EMoore_56, Inspectinfecti_58, JuJu_86, Leonard_57, Phinally_57,

Summary by start number:

Start 2:

- Found in 49 of 54 (90.7%) of genes in pham
- Manual Annotations of this start: 43 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca_59 (DE1), Ailee_58 (DE1), Ali17_55 (DE2), Angelicage_59 (DE1), Baddon_59 (DE1), Barsten_62 (DE1), Baumdotcom_57 (DE1), Bibwit_61 (DE1), BobBob_60 (DE1), Brandonk123_65 (DE1), ChadMasterC_62 (DE1), Charming_63 (DE1), Fitzgerald_58 (DE1), Flatwoods_59 (DE1), Fosterous_63 (DE1), Gaea_61 (DE1), Galadriel_61 (DE1), Geodirt_61 (DE1), Gustavo_61 (DE1), Hans_59 (DE2), JKSyngboy_59 (DE1), Jabberwocky_59 (DE1), Kamashten_60 (DE1), Keitabear_61 (DE1), Kewpiedoll_61 (DE1), Kroos_59 (DE1), Lennon_62 (DE1), Love_64 (DE1), McKinley_63 (DE1), MelBins_58 (DE2), MoontowerMania_60 (DE1), Nordenberg_58 (DE1), Paries_64 (DE1), Phauci_50 (DE2), RiverRaider_62 (DE1), Rofo_60 (DE1), Sanjuju_59 (DE1), Saronaya_61 (DE1), SchottB_58 (DE1), Sedona_60 (DE1), Shivanishola_59 (DE1), Sitar_62 (DE1), StorminNorm_59 (DE1), Stultus_58 (DE1), Tangent_62 (DE1), Tangerine_60 (DE1), Thing3_60 (DE1), Tycho_58 (DE1), Vivi2_65 (DE1),

Start 6:

- Found in 4 of 54 (7.4%) of genes in pham
- Manual Annotations of this start: 3 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EMoore_56 (DE2), Inspectinfecti_58 (DE2), Leonard_57 (DE2), Phinally_57 (DE2),

Start 36:

- Found in 1 of 54 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JuJu_86 (CV),

Summary by clusters:

There are 3 clusters represented in this pham: DE1, DE2, CV,

Info for manual annotations of cluster CV:

- Start number 36 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster DE1:

- Start number 2 was manually annotated 39 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 2 was manually annotated 4 times for cluster DE2.
- Start number 6 was manually annotated 3 times for cluster DE2.

Gene Information:

Gene: Affeca_59 Start: 48685, Stop: 49548, Start Num: 2

Candidate Starts for Affeca_59:

(Start: 2 @48685 has 43 MA's), (3, 48730), (11, 48763), (14, 48784), (22, 48886), (28, 49000), (31, 49057), (32, 49093), (50, 49174), (52, 49180), (57, 49231), (58, 49255), (65, 49294), (66, 49306), (67, 49315), (106, 49540),

Gene: Ailee_58 Start: 48107, Stop: 49438, Start Num: 2

Candidate Starts for Ailee_58:

(Start: 2 @48107 has 43 MA's), (3, 48152), (11, 48179), (14, 48200), (22, 48302), (28, 48416), (31, 48473), (32, 48509), (37, 48611), (39, 48689), (40, 48695), (45, 48761), (50, 48818), (57, 48875), (58, 48899), (65, 48938), (70, 49001), (77, 49094), (78, 49103), (81, 49115), (86, 49193), (100, 49358), (103, 49418),

Gene: Ali17_55 Start: 45697, Stop: 46656, Start Num: 2

Candidate Starts for Ali17_55:

(Start: 2 @45697 has 43 MA's), (7, 45841), (8, 45856), (9, 45859), (10, 45880), (12, 45934), (14, 45946), (18, 45964), (21, 45997), (22, 46060), (28, 46174), (31, 46234), (32, 46270), (56, 46318), (72, 46396), (77, 46441), (81, 46462), (85, 46531), (92, 46624), (95, 46642),

Gene: Angelicage_59 Start: 48758, Stop: 49621, Start Num: 2

Candidate Starts for Angelicage_59:

(Start: 2 @48758 has 43 MA's), (3, 48803), (11, 48836), (14, 48857), (22, 48959), (28, 49073), (31, 49130), (32, 49166), (50, 49247), (52, 49253), (57, 49304), (58, 49328), (65, 49367), (66, 49379), (67, 49388), (106, 49613),

Gene: Baddon_59 Start: 48114, Stop: 49244, Start Num: 2

Candidate Starts for Baddon_59:

(Start: 2 @48114 has 43 MA's), (15, 48180), (19, 48204), (22, 48273), (28, 48387), (31, 48444), (32, 48480), (37, 48582), (45, 48732), (53, 48783), (54, 48804), (57, 48828), (59, 48858), (61, 48873), (66, 48900), (67, 48909), (73, 49005), (81, 49065), (82, 49083), (86, 49137),

Gene: Barsten_62 Start: 48900, Stop: 49757, Start Num: 2

Candidate Starts for Barsten_62:

(Start: 2 @48900 has 43 MA's), (3, 48945), (11, 48972), (14, 48993), (22, 49095), (28, 49209), (29, 49221), (31, 49266), (32, 49302), (50, 49383), (52, 49389), (57, 49440), (58, 49464), (65, 49503), (66, 49515), (67, 49524), (106, 49749),

Gene: Baumdotcom_57 Start: 46701, Stop: 48035, Start Num: 2

Candidate Starts for Baumdotcom_57:

(Start: 2 @46701 has 43 MA's), (11, 46734), (14, 46755), (16, 46764), (22, 46857), (28, 46995), (31, 47052), (32, 47088), (37, 47190), (40, 47274), (45, 47340), (53, 47409), (57, 47454), (66, 47529), (67, 47538), (70, 47580), (72, 47625), (75, 47664), (77, 47673), (81, 47694), (82, 47712), (86, 47766), (105, 48012),

Gene: Bibwit_61 Start: 48153, Stop: 49274, Start Num: 2

Candidate Starts for Bibwit_61:

(Start: 2 @48153 has 43 MA's), (3, 48198), (11, 48225), (14, 48246), (22, 48348), (28, 48462), (31, 48519), (32, 48555), (50, 48636), (52, 48642), (57, 48693), (58, 48717), (65, 48756), (66, 48768), (67, 48777), (77, 48915), (81, 48936), (82, 48954), (89, 49068), (94, 49113), (106, 49266),

Gene: BobBob_60 Start: 47974, Stop: 49047, Start Num: 2

Candidate Starts for BobBob_60:

(Start: 2 @47974 has 43 MA's), (3, 48019), (11, 48046), (14, 48067), (22, 48169), (28, 48280), (29, 48292), (31, 48337), (32, 48373), (41, 48466), (45, 48514), (50, 48571), (57, 48628), (69, 48673), (77, 48700), (90, 48865), (106, 49039),

Gene: Brandonk123_65 Start: 48648, Stop: 49724, Start Num: 2

Candidate Starts for Brandonk123_65:

(Start: 2 @48648 has 43 MA's), (3, 48693), (11, 48720), (14, 48741), (22, 48843), (28, 48954), (31, 49017), (32, 49053), (41, 49143), (45, 49191), (57, 49305), (69, 49350), (77, 49377), (106, 49716),

Gene: ChadMasterC_62 Start: 50308, Stop: 51270, Start Num: 2

Candidate Starts for ChadMasterC_62:

(Start: 2 @50308 has 43 MA's), (3, 50353), (11, 50380), (14, 50401), (22, 50503), (28, 50617), (29, 50629), (31, 50674), (32, 50710), (50, 50791), (52, 50797), (57, 50848), (58, 50872), (65, 50911), (74, 51037), (76, 51061), (81, 51091), (91, 51259),

Gene: Charming_63 Start: 47762, Stop: 48985, Start Num: 2

Candidate Starts for Charming_63:

(Start: 2 @47762 has 43 MA's), (3, 47807), (11, 47834), (14, 47855), (22, 47957), (28, 48068), (31, 48125), (32, 48161), (41, 48254), (45, 48302), (50, 48359), (57, 48416), (65, 48479), (67, 48500), (70, 48542), (77, 48626), (81, 48647), (89, 48779), (94, 48824), (106, 48977),

Gene: EMoore_56 Start: 47210, Stop: 48160, Start Num: 6

Candidate Starts for EMoore_56:

(1, 47051), (3, 47129), (4, 47144), (Start: 6 @47210 has 3 MA's), (14, 47300), (20, 47333), (21, 47351), (22, 47420), (28, 47522), (31, 47579), (32, 47615), (62, 47804), (77, 47969), (78, 47978), (81, 47990), (82, 48008), (95, 48146),

Gene: Fitzgerald_58 Start: 48818, Stop: 50050, Start Num: 2

Candidate Starts for Fitzgerald_58:

(Start: 2 @48818 has 43 MA's), (3, 48863), (11, 48890), (14, 48911), (22, 49013), (28, 49127), (29, 49139), (31, 49184), (32, 49220), (41, 49310), (45, 49358), (50, 49415), (52, 49421), (57, 49472), (60, 49502), (77, 49679), (81, 49700), (82, 49718), (90, 49868), (106, 50042),

Gene: Flatwoods_59 Start: 46541, Stop: 47608, Start Num: 2

Candidate Starts for Flatwoods_59:

(Start: 2 @46541 has 43 MA's), (17, 46613), (19, 46631), (22, 46706), (28, 46820), (29, 46832), (31, 46877), (33, 46943), (46, 46973), (57, 47018), (66, 47090), (67, 47099), (72, 47186), (75, 47225), (77, 47234), (81, 47255), (86, 47339), (105, 47585),

Gene: Fosterous_63 Start: 48909, Stop: 49979, Start Num: 2

Candidate Starts for Fosterous_63:

(Start: 2 @48909 has 43 MA's), (3, 48954), (11, 48981), (14, 49002), (22, 49104), (28, 49215), (29, 49227), (31, 49272), (32, 49308), (41, 49398), (45, 49446), (57, 49560), (69, 49605), (77, 49632), (106, 49971),

Gene: Gaea_61 Start: 47107, Stop: 48300, Start Num: 2

Candidate Starts for Gaea_61:

(Start: 2 @47107 has 43 MA's), (11, 47140), (14, 47161), (22, 47263), (28, 47377), (31, 47434), (32, 47470), (37, 47572), (40, 47656), (45, 47722), (53, 47794), (57, 47839), (66, 47914), (67, 47923), (81, 48070), (84, 48133), (88, 48181),

Gene: Galadriel_61 Start: 49042, Stop: 50259, Start Num: 2

Candidate Starts for Galadriel_61:

(Start: 2 @49042 has 43 MA's), (3, 49087), (11, 49114), (14, 49135), (22, 49237), (28, 49348), (29, 49360), (31, 49405), (32, 49441), (41, 49531), (45, 49579), (50, 49636), (57, 49693), (65, 49756), (67, 49777), (74, 49882), (77, 49915), (81, 49936), (90, 50077), (106, 50251),

Gene: Geodirt_61 Start: 49352, Stop: 50326, Start Num: 2

Candidate Starts for Geodirt_61:

(Start: 2 @49352 has 43 MA's), (3, 49397), (11, 49424), (14, 49445), (22, 49547), (28, 49661), (31, 49718), (32, 49754), (50, 49835), (52, 49841), (57, 49892), (58, 49916), (65, 49955), (66, 49967), (82, 50006), (89, 50120), (94, 50165), (106, 50318),

Gene: Gustavo_61 Start: 47618, Stop: 48964, Start Num: 2

Candidate Starts for Gustavo_61:

(Start: 2 @47618 has 43 MA's), (17, 47690), (19, 47708), (22, 47783), (28, 47921), (31, 47978), (32, 48014), (37, 48116), (40, 48200), (45, 48266), (53, 48338), (57, 48383), (66, 48458), (67, 48467), (70, 48509), (72, 48554), (75, 48593), (77, 48602), (81, 48623), (82, 48641), (86, 48695), (105, 48941),

Gene: Hans_59 Start: 46328, Stop: 47386, Start Num: 2

Candidate Starts for Hans_59:

(Start: 2 @46328 has 43 MA's), (7, 46472), (8, 46487), (9, 46490), (10, 46511), (12, 46565), (14, 46577), (18, 46595), (21, 46628), (22, 46691), (28, 46805), (31, 46865), (32, 46901), (56, 46949), (81, 47087), (82, 47105), (98, 47294), (99, 47297), (101, 47324), (102, 47354),

Gene: Inspectinfecti_58 Start: 46732, Stop: 47517, Start Num: 6

Candidate Starts for Inspectinfecti_58:

(Start: 6 @46732 has 3 MA's), (22, 46945), (28, 47056), (31, 47113), (81, 47323), (82, 47341), (85, 47392), (96, 47503),

Gene: JKSyngboy_59 Start: 48219, Stop: 49349, Start Num: 2

Candidate Starts for JKSyngboy_59:

(Start: 2 @48219 has 43 MA's), (15, 48285), (19, 48309), (22, 48378), (28, 48492), (31, 48549), (32, 48585), (37, 48687), (45, 48837), (53, 48888), (54, 48909), (57, 48933), (59, 48963), (61, 48978), (66, 49005), (67, 49014), (73, 49110), (81, 49170), (82, 49188), (86, 49242),

Gene: Jabberwocky_59 Start: 49193, Stop: 50284, Start Num: 2

Candidate Starts for Jabberwocky_59:

(Start: 2 @49193 has 43 MA's), (3, 49238), (11, 49265), (14, 49286), (22, 49388), (29, 49499), (30, 49520), (31, 49544), (32, 49580), (34, 49637), (42, 49694), (44, 49718), (47, 49757), (48, 49769), (49, 49778), (77, 49913), (81, 49934), (82, 49952), (90, 50102), (106, 50276),

Gene: JuJu_86 Start: 52100, Stop: 52939, Start Num: 36

Candidate Starts for JuJu_86:

(17, 51668), (23, 51776), (24, 51791), (26, 51827), (Start: 36 @52100 has 1 MA's), (38, 52166), (40, 52193), (51, 52313), (55, 52349), (64, 52433), (68, 52490), (71, 52526), (79, 52607), (80, 52613), (83, 52664), (87, 52727), (97, 52826), (104, 52928),

Gene: Kamashten_60 Start: 48087, Stop: 49157, Start Num: 2

Candidate Starts for Kamashten_60:

(Start: 2 @48087 has 43 MA's), (3, 48132), (11, 48159), (14, 48180), (22, 48282), (28, 48393), (29, 48405), (31, 48450), (32, 48486), (41, 48576), (45, 48624), (57, 48738), (69, 48783), (77, 48810), (106, 49149),

Gene: Keitabear_61 Start: 49762, Stop: 50880, Start Num: 2

Candidate Starts for Keitabear_61:

(Start: 2 @49762 has 43 MA's), (3, 49807), (11, 49834), (14, 49855), (22, 49957), (28, 50071), (31, 50128), (32, 50164), (50, 50245), (52, 50251), (57, 50302), (58, 50326), (65, 50365), (70, 50428), (77, 50521), (81, 50542), (89, 50674), (94, 50719), (106, 50872),

Gene: Kewpiedoll_61 Start: 49141, Stop: 50238, Start Num: 2

Candidate Starts for Kewpiedoll_61:

(Start: 2 @49141 has 43 MA's), (3, 49186), (11, 49351), (22, 49474), (28, 49585), (31, 49642), (32, 49678), (50, 49759), (52, 49765), (57, 49816), (58, 49840), (65, 49879), (66, 49891), (82, 49930), (89, 50032), (94, 50077), (106, 50230),

Gene: Kroos_59 Start: 47638, Stop: 48705, Start Num: 2

Candidate Starts for Kroos_59:

(Start: 2 @47638 has 43 MA's), (17, 47710), (19, 47728), (22, 47803), (28, 47917), (29, 47929), (31, 47974), (33, 48040), (46, 48070), (57, 48115), (66, 48187), (67, 48196), (72, 48283), (75, 48322), (77, 48331), (81, 48352), (86, 48436), (105, 48682),

Gene: Lennon_62 Start: 50070, Stop: 51029, Start Num: 2

Candidate Starts for Lennon_62:

(Start: 2 @50070 has 43 MA's), (3, 50115), (11, 50142), (14, 50163), (22, 50265), (28, 50379), (29, 50391), (31, 50436), (32, 50472), (50, 50553), (52, 50559), (57, 50610), (58, 50634), (65, 50673), (66, 50685), (82, 50724), (94, 50868), (106, 51021),

Gene: Leonard_57 Start: 46698, Stop: 47588, Start Num: 6

Candidate Starts for Leonard_57:

(Start: 6 @46698 has 3 MA's), (12, 46776), (13, 46779), (14, 46788), (22, 46911), (28, 47022), (31, 47079), (81, 47289), (82, 47307), (98, 47496), (99, 47499), (101, 47526), (102, 47556),

Gene: Love_64 Start: 49089, Stop: 50165, Start Num: 2

Candidate Starts for Love_64:

(Start: 2 @49089 has 43 MA's), (3, 49134), (11, 49161), (14, 49182), (22, 49284), (25, 49320), (28, 49404), (29, 49416), (31, 49461), (32, 49497), (35, 49563), (63, 49764), (76, 49788), (77, 49797), (81, 49818), (90, 49983), (106, 50157),

Gene: McKinley_63 Start: 48890, Stop: 49840, Start Num: 2

Candidate Starts for McKinley_63:

(Start: 2 @48890 has 43 MA's), (3, 48935), (11, 48968), (14, 48989), (22, 49091), (29, 49202), (30, 49223), (31, 49247), (32, 49283), (50, 49364), (52, 49370), (57, 49421), (58, 49445), (65, 49484), (66, 49496), (82, 49535), (106, 49832),

Gene: MelBins_58 Start: 46810, Stop: 47757, Start Num: 2

Candidate Starts for MelBins_58:

(Start: 2 @46810 has 43 MA's), (5, 46894), (10, 46984), (14, 47050), (18, 47068), (21, 47101), (22, 47164), (28, 47278), (31, 47335), (32, 47371), (56, 47419), (72, 47497), (77, 47542), (81, 47563), (85, 47632), (92, 47725), (95, 47743),

Gene: MoontowerMania_60 Start: 49188, Stop: 50267, Start Num: 2

Candidate Starts for MoontowerMania_60:

(Start: 2 @49188 has 43 MA's), (3, 49233), (11, 49260), (14, 49281), (22, 49383), (27, 49449), (28, 49494), (29, 49506), (31, 49551), (32, 49587), (50, 49668), (52, 49674), (54, 49701), (57, 49725), (60, 49755), (81, 49944), (90, 50085), (106, 50259),

Gene: Nordenberg_58 Start: 47326, Stop: 48549, Start Num: 2

Candidate Starts for Nordenberg_58:

(Start: 2 @47326 has 43 MA's), (3, 47371), (11, 47398), (14, 47419), (22, 47521), (28, 47632), (31, 47689), (32, 47725), (41, 47818), (45, 47866), (50, 47923), (57, 47980), (65, 48043), (67, 48064), (70, 48106), (77, 48190), (81, 48211), (89, 48343), (94, 48388), (106, 48541),

Gene: Paries_64 Start: 49225, Stop: 50445, Start Num: 2

Candidate Starts for Paries_64:

(Start: 2 @49225 has 43 MA's), (3, 49270), (11, 49297), (14, 49318), (22, 49420), (28, 49534), (29, 49546), (31, 49591), (32, 49627), (41, 49717), (45, 49765), (50, 49822), (52, 49828), (57, 49879), (58, 49903), (65, 49942), (66, 49954), (74, 50068), (76, 50092), (77, 50101), (81, 50122), (90, 50263), (106, 50437),

Gene: Phauci_50 Start: 43331, Stop: 44437, Start Num: 2

Candidate Starts for Phauci_50:

(Start: 2 @43331 has 43 MA's), (7, 43475), (8, 43490), (9, 43493), (10, 43514), (12, 43568), (14, 43580), (18, 43598), (21, 43631), (22, 43694), (28, 43808), (31, 43868), (32, 43904), (61, 44060), (81, 44243), (82, 44261), (85, 44312), (95, 44423),

Gene: Phinally_57 Start: 46695, Stop: 47585, Start Num: 6

Candidate Starts for Phinally_57:

(Start: 6 @46695 has 3 MA's), (12, 46773), (13, 46776), (14, 46785), (22, 46908), (28, 47019), (31, 47076), (81, 47286), (82, 47304), (98, 47493), (99, 47496), (101, 47523), (102, 47553),

Gene: RiverRaider_62 Start: 46742, Stop: 47599, Start Num: 2

Candidate Starts for RiverRaider_62:

(Start: 2 @46742 has 43 MA's), (3, 46787), (11, 46814), (14, 46835), (22, 46937), (28, 47051), (29, 47063), (31, 47108), (32, 47144), (50, 47225), (52, 47231), (57, 47282), (58, 47306), (65, 47345), (66, 47357), (67, 47366), (106, 47591),

Gene: Rofo_60 Start: 48491, Stop: 49561, Start Num: 2

Candidate Starts for Rofo_60:

(Start: 2 @48491 has 43 MA's), (3, 48536), (11, 48563), (14, 48584), (22, 48686), (28, 48797), (29, 48809), (31, 48854), (32, 48890), (41, 48980), (45, 49028), (57, 49142), (69, 49187), (77, 49214), (106, 49553),

Gene: Sanjuju_59 Start: 48950, Stop: 50182, Start Num: 2

Candidate Starts for Sanjuju_59:

(Start: 2 @48950 has 43 MA's), (3, 48995), (11, 49022), (14, 49043), (22, 49145), (28, 49259), (29, 49271), (31, 49316), (32, 49352), (41, 49442), (45, 49490), (50, 49547), (52, 49553), (57, 49604), (60, 49634), (77, 49811), (81, 49832), (82, 49850), (90, 50000), (106, 50174),

Gene: Saronaya_61 Start: 47618, Stop: 48964, Start Num: 2

Candidate Starts for Saronaya_61:

(Start: 2 @47618 has 43 MA's), (17, 47690), (19, 47708), (22, 47783), (28, 47921), (31, 47978), (32, 48014), (37, 48116), (40, 48200), (45, 48266), (53, 48338), (57, 48383), (66, 48458), (67, 48467), (70, 48509), (72, 48554), (75, 48593), (77, 48602), (81, 48623), (82, 48641), (86, 48695), (105, 48941),

Gene: SchottB_58 Start: 47810, Stop: 48874, Start Num: 2

Candidate Starts for SchottB_58:

(Start: 2 @47810 has 43 MA's), (15, 47876), (19, 47900), (22, 47969), (28, 48083), (31, 48140), (43, 48224), (57, 48284), (61, 48329), (66, 48356), (67, 48365), (77, 48500), (81, 48521), (86, 48605), (97, 48728), (105, 48851),

Gene: Sedona_60 Start: 49583, Stop: 50710, Start Num: 2

Candidate Starts for Sedona_60:

(Start: 2 @49583 has 43 MA's), (3, 49628), (11, 49661), (14, 49682), (22, 49784), (28, 49898), (29, 49910), (31, 49955), (32, 49991), (50, 50072), (52, 50078), (57, 50129), (65, 50192), (67, 50213), (70, 50255), (77, 50351), (81, 50372), (89, 50504), (94, 50549), (106, 50702),

Gene: Shivanishola_59 Start: 46800, Stop: 47876, Start Num: 2

Candidate Starts for Shivanishola_59:

(Start: 2 @46800 has 43 MA's), (3, 46845), (11, 46872), (14, 46893), (22, 46995), (25, 47031), (28, 47115), (29, 47127), (31, 47172), (32, 47208), (35, 47274), (63, 47475), (76, 47499), (77, 47508), (81, 47529), (90, 47694), (106, 47868),

Gene: Sitar_62 Start: 49779, Stop: 50738, Start Num: 2

Candidate Starts for Sitar_62:

(Start: 2 @49779 has 43 MA's), (3, 49824), (11, 49851), (14, 49872), (22, 49974), (28, 50088), (29, 50100), (31, 50145), (32, 50181), (50, 50262), (52, 50268), (57, 50319), (58, 50343), (65, 50382), (66, 50394), (82, 50433), (94, 50577), (106, 50730),

Gene: StorminNorm_59 Start: 47260, Stop: 48606, Start Num: 2

Candidate Starts for StorminNorm_59:

(Start: 2 @47260 has 43 MA's), (17, 47332), (19, 47350), (22, 47425), (28, 47563), (31, 47620), (32, 47656), (37, 47758), (40, 47842), (45, 47908), (53, 47980), (57, 48025), (66, 48100), (67, 48109), (70, 48151), (72, 48196), (75, 48235), (77, 48244), (81, 48265), (82, 48283), (86, 48337), (105, 48583),

Gene: Stultus_58 Start: 48041, Stop: 49000, Start Num: 2

Candidate Starts for Stultus_58:

(Start: 2 @48041 has 43 MA's), (3, 48086), (11, 48113), (14, 48134), (22, 48236), (28, 48350), (31, 48407), (32, 48443), (50, 48524), (52, 48530), (57, 48581), (58, 48605), (65, 48644), (66, 48656), (82, 48695), (94, 48839), (106, 48992),

Gene: Tangent_62 Start: 48196, Stop: 49266, Start Num: 2

Candidate Starts for Tangent_62:

(Start: 2 @48196 has 43 MA's), (3, 48241), (11, 48268), (14, 48289), (22, 48391), (28, 48502), (29, 48514), (31, 48559), (32, 48595), (41, 48685), (45, 48733), (57, 48847), (69, 48892), (77, 48919), (106, 49258),

Gene: Tangerine_60 Start: 47020, Stop: 48357, Start Num: 2

Candidate Starts for Tangerine_60:

(Start: 2 @47020 has 43 MA's), (11, 47053), (14, 47074), (16, 47083), (22, 47176), (28, 47314), (31, 47371), (32, 47407), (37, 47509), (40, 47593), (45, 47659), (53, 47731), (57, 47776), (66, 47851), (67, 47860), (70, 47902), (72, 47947), (75, 47986), (77, 47995), (81, 48016), (82, 48034), (86, 48088), (105, 48334),

Gene: Thing3_60 Start: 48087, Stop: 49157, Start Num: 2

Candidate Starts for Thing3_60:

(Start: 2 @48087 has 43 MA's), (3, 48132), (11, 48159), (14, 48180), (22, 48282), (28, 48393), (29, 48405), (31, 48450), (32, 48486), (41, 48576), (45, 48624), (57, 48738), (69, 48783), (77, 48810), (106, 49149),

Gene: Tycho_58 Start: 46784, Stop: 48127, Start Num: 2

Candidate Starts for Tycho_58:

(Start: 2 @46784 has 43 MA's), (11, 46817), (14, 46838), (16, 46847), (22, 46940), (28, 47078), (31, 47135), (32, 47171), (37, 47273), (40, 47357), (45, 47423), (53, 47492), (57, 47537), (66, 47609), (67, 47618), (72, 47705), (75, 47744), (77, 47753), (81, 47774), (86, 47858), (105, 48104),

Gene: Vivi2_65 Start: 49251, Stop: 50327, Start Num: 2

Candidate Starts for Vivi2_65:

(Start: 2 @49251 has 43 MA's), (3, 49296), (11, 49323), (14, 49344), (22, 49446), (28, 49557), (29, 49569), (31, 49614), (32, 49650), (45, 49788), (50, 49845), (57, 49902), (65, 49965), (77, 50124), (81, 50145), (89, 50277), (93, 50313), (94, 50316),