Pham 291244

1: Schmidt_40

2: Catfish_44

3: Bricole_56 + 15

4: RoseMarie_61

5: Reindeer_58

6: MrMagoo_65 + 2

7: Rey_63

8: GenevaB15_63 + 1

9: Nanosmite_61

10: Corazon_64 + 16

11: VasuNzinga_65 + 2

12: Wildcat_67 + 3

13: EniyanLRS_64

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 291244 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291244 has 52 members, 5 are drafts.

Phages represented in each track:
• Track 1 : Schmidt_40
• Track 2 : Catfish_44
• Track 3 : Bricole_56, Dulcita_57, Glaske16_57, Bongo_56, LilhomieP_55, FreakyGoo_57, Diminimus_57, Skinny_58, IPhane7_56, KleverKiS_57, TpudiCK_58, SlimJimmy_55, PegLeg_56, Izel_57, Auspice_56, TyDawg_56
• Track 4 : RoseMarie_61
• Track 5 : Reindeer_58
• Track 6 : MrMagoo_65, Estes_64, GardenSalsa_64
• Track 7 : Rey_63
• Track 8 : GenevaB15_63, Aziz_62
• Track 9 : Nanosmite_61
• Track 10 : Corazon_64, Marvin_62, Lilbit_64, LittleLaf_66, Huphlepuff_68, Blackbeetle_66, Gattaca_64, MosMoris_63, Caprice_61, Raela_66, FeliMaine_68, Tesla_63, GoongGoong_63, JoieB_67, RedRaider77_65, Poise_66, Clarkson_67
• Track 11 : VasuNzinga_65, Beelzebub_70, Pringar_65
• Track 12 : Wildcat_67, Cosmo_68, MaryV_67, Azrael100_67
• Track 13 : EniyanLRS_64

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

The start number called the most often in the published annotations is 4, it was called in 20 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Beelzebub_70, Blackbeetle_66, Caprice_61, Catfish_44, Clarkson_67, Corazon_64, FeliMaine_68, Gattaca_64, GoongGoong_63, Huphlepuff_68, JoieB_67, Lilbit_64, LittleLaf_66, Marvin_62, MosMoris_63, Poise_66, Pringar_65, Raela_66, RedRaider77_65, Schmidt_40, Tesla_63, VasuNzinga_65,

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

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

• Auspice_56, Aziz_62, Azrael100_67, Bongo_56, Bricole_56, Cosmo_68, Diminimus_57, Dulcita_57, EniyanLRS_64, Estes_64, FreakyGoo_57, GardenSalsa_64, GenevaB15_63, Glaske16_57, IPhane7_56, Izel_57, KleverKiS_57, LilhomieP_55, MaryV_67, MrMagoo_65, Nanosmite_61, PegLeg_56, Reindeer_58, Rey_63, RoseMarie_61, Skinny_58, SlimJimmy_55, TpudiCK_58, TyDawg_56, Wildcat_67,

Summary by start number:

Start 4:
• Found in 22 of 52 (42.3%) of genes in pham
• Manual Annotations of this start: 20 of 47
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Beelzebub_70 (S), Blackbeetle_66 (S), Caprice_61 (S), Catfish_44 (CU5), Clarkson_67 (S), Corazon_64 (S), FeliMaine_68 (S), Gattaca_64 (S), GoongGoong_63 (S), Huphlepuff_68 (S), JoieB_67 (S), Lilbit_64 (S), LittleLaf_66 (S), Marvin_62 (S), MosMoris_63 (S), Poise_66 (S), Pringar_65 (S), Raela_66 (S), RedRaider77_65 (S), Schmidt_40 (CU4), Tesla_63 (S), VasuNzinga_65 (S),

Start 7:
• Found in 6 of 52 (11.5%) of genes in pham
• Manual Annotations of this start: 6 of 47
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Azrael100_67 (V), Cosmo_68 (V), EniyanLRS_64 (V), MaryV_67 (V), Rey_63 (M2), Wildcat_67 (V),

Start 8:
• Found in 20 of 52 (38.5%) of genes in pham
• Manual Annotations of this start: 16 of 47
• Called 95.0% of time when present
• Phage (with cluster) where this start called: Auspice_56 (M1), Bongo_56 (M1), Bricole_56 (M1), Diminimus_57 (M1), Dulcita_57 (M1), FreakyGoo_57 (M1), Glaske16_57 (M1), IPhane7_56 (M1), Izel_57 (M1), KleverKiS_57 (M1), LilhomieP_55 (M1), Nanosmite_61 (M3), PegLeg_56 (M1), Reindeer_58 (M1), RoseMarie_61 (M1), Skinny_58 (M1), SlimJimmy_55 (M1), TpudiCK_58 (M1), TyDawg_56 (M1),

Start 12:
• Found in 27 of 52 (51.9%) of genes in pham
• Manual Annotations of this start: 5 of 47
• Called 18.5% of time when present
• Phage (with cluster) where this start called: Aziz_62 (M2), Estes_64 (M2), GardenSalsa_64 (M2), GenevaB15_63 (M2), MrMagoo_65 (M2),

Summary by clusters:

There are 7 clusters represented in this pham: CU5, CU4, V, S, M1, M3, M2,

Info for manual annotations of cluster CU4:
•Start number 4 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster CU5:

•Start number 4 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster M1:
•Start number 8 was manually annotated 15 times for cluster M1.

Info for manual annotations of cluster M2:
•Start number 7 was manually annotated 1 time for cluster M2.
•Start number 12 was manually annotated 5 times for cluster M2.

Info for manual annotations of cluster M3:
•Start number 8 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster S:
•Start number 4 was manually annotated 18 times for cluster S.

Info for manual annotations of cluster V:
•Start number 7 was manually annotated 5 times for cluster V.

Gene Information:

Gene: Auspice_56 Start: 39488, Stop: 40348, Start Num: 8
Candidate Starts for Auspice_56:
(Start: 8 @39488 has 16 MA's), (Start: 12 @39602 has 5 MA's), (32, 39860), (34, 39896), (38, 39914), (40, 39920), (41, 39926), (43, 39947), (50, 40004), (52, 40043), (54, 40049), (58, 40100), (65, 40196), (68, 40247), (71, 40262), (79, 40337), (80, 40340),

Gene: Aziz_62 Start: 41623, Stop: 42369, Start Num: 12
Candidate Starts for Aziz_62:
(Start: 12 @41623 has 5 MA's), (27, 41845), (37, 41929), (38, 41935), (40, 41941), (43, 41968), (50, 42025), (52, 42064), (54, 42070), (59, 42124), (60, 42127), (65, 42217), (67, 42244), (75, 42331), (79, 42358),

Gene: Azrael100_67 Start: 44691, Stop: 45596, Start Num: 7
Candidate Starts for Azrael100_67:
(Start: 7 @44691 has 6 MA's), (11, 44844), (13, 44853), (14, 44859), (17, 44889), (18, 44901), (21, 44952), (26, 45060), (28, 45081), (30, 45096), (35, 45144), (45, 45210), (47, 45219), (51, 45276), (65, 45444), (66, 45462), (72, 45528), (73, 45534), (74, 45549), (79, 45585),

Gene: Beelzebub_70 Start: 37655, Stop: 38608, Start Num: 4
Candidate Starts for Beelzebub_70:
(1, 37487), (Start: 4 @37655 has 20 MA's), (15, 37853), (20, 37946), (22, 37994), (24, 38024), (27, 38075), (31, 38108), (36, 38147), (46, 38237), (48, 38270), (49, 38273), (53, 38321), (56, 38339), (57, 38360), (62, 38426), (63, 38438), (72, 38546),

Gene: Blackbeetle_66 Start: 36700, Stop: 37653, Start Num: 4
Candidate Starts for Blackbeetle_66:
(Start: 4 @36700 has 20 MA's), (15, 36898), (20, 36991), (22, 37039), (24, 37069), (27, 37120), (31, 37153), (36, 37192), (46, 37282), (48, 37315), (49, 37318), (53, 37366), (56, 37384), (57, 37405), (62, 37471), (63, 37483), (72, 37591),

Gene: Bongo_56 Start: 39492, Stop: 40352, Start Num: 8

Candidate Starts for Bongo_56:
(Start: 8 @39492 has 16 MA's), (Start: 12 @39606 has 5 MA's), (32, 39864), (34, 39900), (38, 39918), (40, 39924), (41, 39930), (43, 39951), (50, 40008), (52, 40047), (54, 40053), (58, 40104), (65, 40200), (68, 40251), (71, 40266), (79, 40341), (80, 40344),

Gene: Bricole_56 Start: 39474, Stop: 40334, Start Num: 8
Candidate Starts for Bricole_56:
(Start: 8 @39474 has 16 MA's), (Start: 12 @39588 has 5 MA's), (32, 39846), (34, 39882), (38, 39900), (40, 39906), (41, 39912), (43, 39933), (50, 39990), (52, 40029), (54, 40035), (58, 40086), (65, 40182), (68, 40233), (71, 40248), (79, 40323), (80, 40326),

Gene: Caprice_61 Start: 37014, Stop: 37967, Start Num: 4
Candidate Starts for Caprice_61:
(Start: 4 @37014 has 20 MA's), (15, 37212), (20, 37305), (22, 37353), (24, 37383), (27, 37434), (31, 37467), (36, 37506), (46, 37596), (48, 37629), (49, 37632), (53, 37680), (56, 37698), (57, 37719), (62, 37785), (63, 37797), (72, 37905),

Gene: Catfish_44 Start: 31656, Stop: 32582, Start Num: 4
Candidate Starts for Catfish_44:
(Start: 4 @31656 has 20 MA's), (10, 31797), (Start: 12 @31842 has 5 MA's), (13, 31845), (18, 31893), (19, 31935), (25, 32025), (26, 32052), (31, 32097), (33, 32112), (37, 32139), (42, 32166), (44, 32178), (57, 32289), (61, 32325), (62, 32355), (69, 32445), (71, 32457), (75, 32505), (76, 32508), (78, 32526),

Gene: Clarkson_67 Start: 37383, Stop: 38336, Start Num: 4
Candidate Starts for Clarkson_67:
(Start: 4 @37383 has 20 MA's), (15, 37581), (20, 37674), (22, 37722), (24, 37752), (27, 37803), (31, 37836), (36, 37875), (46, 37965), (48, 37998), (49, 38001), (53, 38049), (56, 38067), (57, 38088), (62, 38154), (63, 38166), (72, 38274),

Gene: Corazon_64 Start: 37577, Stop: 38530, Start Num: 4
Candidate Starts for Corazon_64:
(Start: 4 @37577 has 20 MA's), (15, 37775), (20, 37868), (22, 37916), (24, 37946), (27, 37997), (31, 38030), (36, 38069), (46, 38159), (48, 38192), (49, 38195), (53, 38243), (56, 38261), (57, 38282), (62, 38348), (63, 38360), (72, 38468),

Gene: Cosmo_68 Start: 44692, Stop: 45597, Start Num: 7
Candidate Starts for Cosmo_68:
(Start: 7 @44692 has 6 MA's), (11, 44845), (13, 44854), (14, 44860), (17, 44890), (18, 44902), (21, 44953), (26, 45061), (28, 45082), (30, 45097), (35, 45145), (45, 45211), (47, 45220), (51, 45277), (65, 45445), (66, 45463), (72, 45529), (73, 45535), (74, 45550), (79, 45586),

Gene: Diminimus_57 Start: 39487, Stop: 40347, Start Num: 8
Candidate Starts for Diminimus_57:
(Start: 8 @39487 has 16 MA's), (Start: 12 @39601 has 5 MA's), (32, 39859), (34, 39895), (38, 39913), (40, 39919), (41, 39925), (43, 39946), (50, 40003), (52, 40042), (54, 40048), (58, 40099), (65, 40195), (68, 40246), (71, 40261), (79, 40336), (80, 40339),

Gene: Dulcita_57 Start: 39488, Stop: 40348, Start Num: 8
Candidate Starts for Dulcita_57:
(Start: 8 @39488 has 16 MA's), (Start: 12 @39602 has 5 MA's), (32, 39860), (34, 39896), (38, 39914), (40, 39920), (41, 39926), (43, 39947), (50, 40004), (52, 40043), (54, 40049), (58, 40100), (65, 40196), (68, 40247), (71, 40262), (79, 40337), (80, 40340),

Gene: EniyanLRS_64 Start: 44431, Stop: 45336, Start Num: 7
Candidate Starts for EniyanLRS_64:
(2, 44380), (3, 44392), (5, 44416), (Start: 7 @44431 has 6 MA's), (11, 44584), (13, 44593), (14, 44599),
(17, 44629), (18, 44641), (21, 44692), (23, 44758), (26, 44800), (27, 44812), (28, 44821), (30, 44836),
(35, 44884), (45, 44950), (47, 44959), (51, 45016), (65, 45184), (66, 45202), (72, 45268), (73, 45274),
(74, 45289), (79, 45325),

Gene: Estes_64 Start: 41895, Stop: 42641, Start Num: 12
Candidate Starts for Estes_64:
(Start: 12 @41895 has 5 MA's), (37, 42201), (38, 42207), (40, 42213), (43, 42240), (50, 42297), (52,
42336), (54, 42342), (59, 42396), (60, 42399), (65, 42489), (67, 42516), (75, 42603), (79, 42630),

Gene: FeliMaine_68 Start: 37625, Stop: 38578, Start Num: 4
Candidate Starts for FeliMaine_68:
(Start: 4 @37625 has 20 MA's), (15, 37823), (20, 37916), (22, 37964), (24, 37994), (27, 38045), (31,
38078), (36, 38117), (46, 38207), (48, 38240), (49, 38243), (53, 38291), (56, 38309), (57, 38330), (62,
38396), (63, 38408), (72, 38516),

Gene: FreakyGoo_57 Start: 39488, Stop: 40348, Start Num: 8
Candidate Starts for FreakyGoo_57:
(Start: 8 @39488 has 16 MA's), (Start: 12 @39602 has 5 MA's), (32, 39860), (34, 39896), (38, 39914),
(40, 39920), (41, 39926), (43, 39947), (50, 40004), (52, 40043), (54, 40049), (58, 40100), (65, 40196),
(68, 40247), (71, 40262), (79, 40337), (80, 40340),

Gene: GardenSalsa_64 Start: 42057, Stop: 42803, Start Num: 12
Candidate Starts for GardenSalsa_64:
(Start: 12 @42057 has 5 MA's), (37, 42363), (38, 42369), (40, 42375), (43, 42402), (50, 42459), (52,
42498), (54, 42504), (59, 42558), (60, 42561), (65, 42651), (67, 42678), (75, 42765), (79, 42792),

Gene: Gattaca_64 Start: 36804, Stop: 37757, Start Num: 4
Candidate Starts for Gattaca_64:
(Start: 4 @36804 has 20 MA's), (15, 37002), (20, 37095), (22, 37143), (24, 37173), (27, 37224), (31,
37257), (36, 37296), (46, 37386), (48, 37419), (49, 37422), (53, 37470), (56, 37488), (57, 37509), (62,
37575), (63, 37587), (72, 37695),

Gene: GenevaB15_63 Start: 41623, Stop: 42369, Start Num: 12
Candidate Starts for GenevaB15_63:
(Start: 12 @41623 has 5 MA's), (27, 41845), (37, 41929), (38, 41935), (40, 41941), (43, 41968), (50,
42025), (52, 42064), (54, 42070), (59, 42124), (60, 42127), (65, 42217), (67, 42244), (75, 42331), (79,
42358),

Gene: Glaske16_57 Start: 39487, Stop: 40347, Start Num: 8
Candidate Starts for Glaske16_57:
(Start: 8 @39487 has 16 MA's), (Start: 12 @39601 has 5 MA's), (32, 39859), (34, 39895), (38, 39913),
(40, 39919), (41, 39925), (43, 39946), (50, 40003), (52, 40042), (54, 40048), (58, 40099), (65, 40195),
(68, 40246), (71, 40261), (79, 40336), (80, 40339),

Gene: GoongGoong_63 Start: 36603, Stop: 37556, Start Num: 4
Candidate Starts for GoongGoong_63:
(Start: 4 @36603 has 20 MA's), (15, 36801), (20, 36894), (22, 36942), (24, 36972), (27, 37023), (31,
37056), (36, 37095), (46, 37185), (48, 37218), (49, 37221), (53, 37269), (56, 37287), (57, 37308), (62,
37374), (63, 37386), (72, 37494),

Gene: Huphlepuff_68 Start: 37188, Stop: 38141, Start Num: 4
Candidate Starts for Huphlepuff_68:
(Start: 4 @37188 has 20 MA's), (15, 37386), (20, 37479), (22, 37527), (24, 37557), (27, 37608), (31, 37641), (36, 37680), (46, 37770), (48, 37803), (49, 37806), (53, 37854), (56, 37872), (57, 37893), (62, 37959), (63, 37971), (72, 38079),

Gene: IPhane7_56 Start: 39492, Stop: 40352, Start Num: 8
Candidate Starts for IPhane7_56:
(Start: 8 @39492 has 16 MA's), (Start: 12 @39606 has 5 MA's), (32, 39864), (34, 39900), (38, 39918), (40, 39924), (41, 39930), (43, 39951), (50, 40008), (52, 40047), (54, 40053), (58, 40104), (65, 40200), (68, 40251), (71, 40266), (79, 40341), (80, 40344),

Gene: Izel_57 Start: 39487, Stop: 40347, Start Num: 8
Candidate Starts for Izel_57:
(Start: 8 @39487 has 16 MA's), (Start: 12 @39601 has 5 MA's), (32, 39859), (34, 39895), (38, 39913), (40, 39919), (41, 39925), (43, 39946), (50, 40003), (52, 40042), (54, 40048), (58, 40099), (65, 40195), (68, 40246), (71, 40261), (79, 40336), (80, 40339),

Gene: JoieB_67 Start: 37621, Stop: 38574, Start Num: 4
Candidate Starts for JoieB_67:
(Start: 4 @37621 has 20 MA's), (15, 37819), (20, 37912), (22, 37960), (24, 37990), (27, 38041), (31, 38074), (36, 38113), (46, 38203), (48, 38236), (49, 38239), (53, 38287), (56, 38305), (57, 38326), (62, 38392), (63, 38404), (72, 38512),

Gene: KleverKiS_57 Start: 39468, Stop: 40328, Start Num: 8
Candidate Starts for KleverKiS_57:
(Start: 8 @39468 has 16 MA's), (Start: 12 @39582 has 5 MA's), (32, 39840), (34, 39876), (38, 39894), (40, 39900), (41, 39906), (43, 39927), (50, 39984), (52, 40023), (54, 40029), (58, 40080), (65, 40176), (68, 40227), (71, 40242), (79, 40317), (80, 40320),

Gene: Lilbit_64 Start: 37384, Stop: 38337, Start Num: 4
Candidate Starts for Lilbit_64:
(Start: 4 @37384 has 20 MA's), (15, 37582), (20, 37675), (22, 37723), (24, 37753), (27, 37804), (31, 37837), (36, 37876), (46, 37966), (48, 37999), (49, 38002), (53, 38050), (56, 38068), (57, 38089), (62, 38155), (63, 38167), (72, 38275),

Gene: LilhomieP_55 Start: 39492, Stop: 40352, Start Num: 8
Candidate Starts for LilhomieP_55:
(Start: 8 @39492 has 16 MA's), (Start: 12 @39606 has 5 MA's), (32, 39864), (34, 39900), (38, 39918), (40, 39924), (41, 39930), (43, 39951), (50, 40008), (52, 40047), (54, 40053), (58, 40104), (65, 40200), (68, 40251), (71, 40266), (79, 40341), (80, 40344),

Gene: LittleLaf_66 Start: 37113, Stop: 38066, Start Num: 4
Candidate Starts for LittleLaf_66:
(Start: 4 @37113 has 20 MA's), (15, 37311), (20, 37404), (22, 37452), (24, 37482), (27, 37533), (31, 37566), (36, 37605), (46, 37695), (48, 37728), (49, 37731), (53, 37779), (56, 37797), (57, 37818), (62, 37884), (63, 37896), (72, 38004),

Gene: Marvin_62 Start: 36871, Stop: 37824, Start Num: 4
Candidate Starts for Marvin_62:
(Start: 4 @36871 has 20 MA's), (15, 37069), (20, 37162), (22, 37210), (24, 37240), (27, 37291), (31, 37324), (36, 37363), (46, 37453), (48, 37486), (49, 37489), (53, 37537), (56, 37555), (57, 37576), (62, 37642), (63, 37654), (72, 37762),

Gene: MaryV_67 Start: 44513, Stop: 45418, Start Num: 7
Candidate Starts for MaryV_67:
(Start: 7 @44513 has 6 MA's), (11, 44666), (13, 44675), (14, 44681), (17, 44711), (18, 44723), (21, 44774), (26, 44882), (28, 44903), (30, 44918), (35, 44966), (45, 45032), (47, 45041), (51, 45098), (65, 45266), (66, 45284), (72, 45350), (73, 45356), (74, 45371), (79, 45407),

Gene: MosMoris_63 Start: 36804, Stop: 37757, Start Num: 4
Candidate Starts for MosMoris_63:
(Start: 4 @36804 has 20 MA's), (15, 37002), (20, 37095), (22, 37143), (24, 37173), (27, 37224), (31, 37257), (36, 37296), (46, 37386), (48, 37419), (49, 37422), (53, 37470), (56, 37488), (57, 37509), (62, 37575), (63, 37587), (72, 37695),

Gene: MrMagoo_65 Start: 42057, Stop: 42803, Start Num: 12
Candidate Starts for MrMagoo_65:
(Start: 12 @42057 has 5 MA's), (37, 42363), (38, 42369), (40, 42375), (43, 42402), (50, 42459), (52, 42498), (54, 42504), (59, 42558), (60, 42561), (65, 42651), (67, 42678), (75, 42765), (79, 42792),

Gene: Nanosmite_61 Start: 41136, Stop: 41996, Start Num: 8
Candidate Starts for Nanosmite_61:
(Start: 8 @41136 has 16 MA's), (Start: 12 @41250 has 5 MA's), (32, 41508), (34, 41544), (38, 41562), (40, 41568), (50, 41652), (52, 41691), (59, 41751), (65, 41844), (68, 41895), (79, 41985), (80, 41988),

Gene: PegLeg_56 Start: 39491, Stop: 40351, Start Num: 8
Candidate Starts for PegLeg_56:
(Start: 8 @39491 has 16 MA's), (Start: 12 @39605 has 5 MA's), (32, 39863), (34, 39899), (38, 39917), (40, 39923), (41, 39929), (43, 39950), (50, 40007), (52, 40046), (54, 40052), (58, 40103), (65, 40199), (68, 40250), (71, 40265), (79, 40340), (80, 40343),

Gene: Poise_66 Start: 36700, Stop: 37653, Start Num: 4
Candidate Starts for Poise_66:
(Start: 4 @36700 has 20 MA's), (15, 36898), (20, 36991), (22, 37039), (24, 37069), (27, 37120), (31, 37153), (36, 37192), (46, 37282), (48, 37315), (49, 37318), (53, 37366), (56, 37384), (57, 37405), (62, 37471), (63, 37483), (72, 37591),

Gene: Pringar_65 Start: 36989, Stop: 37942, Start Num: 4
Candidate Starts for Pringar_65:
(1, 36821), (Start: 4 @36989 has 20 MA's), (15, 37187), (20, 37280), (22, 37328), (24, 37358), (27, 37409), (31, 37442), (36, 37481), (46, 37571), (48, 37604), (49, 37607), (53, 37655), (56, 37673), (57, 37694), (62, 37760), (63, 37772), (72, 37880),

Gene: Raela_66 Start: 37257, Stop: 38210, Start Num: 4
Candidate Starts for Raela_66:
(Start: 4 @37257 has 20 MA's), (15, 37455), (20, 37548), (22, 37596), (24, 37626), (27, 37677), (31, 37710), (36, 37749), (46, 37839), (48, 37872), (49, 37875), (53, 37923), (56, 37941), (57, 37962), (62, 38028), (63, 38040), (72, 38148),

Gene: RedRaider77_65 Start: 36645, Stop: 37598, Start Num: 4
Candidate Starts for RedRaider77_65:
(Start: 4 @36645 has 20 MA's), (15, 36843), (20, 36936), (22, 36984), (24, 37014), (27, 37065), (31, 37098), (36, 37137), (46, 37227), (48, 37260), (49, 37263), (53, 37311), (56, 37329), (57, 37350), (62, 37416), (63, 37428), (72, 37536),

Gene: Reindeer_58 Start: 40686, Stop: 41546, Start Num: 8
Candidate Starts for Reindeer_58:
(Start: 8 @40686 has 16 MA's), (Start: 12 @40800 has 5 MA's), (16, 40830), (25, 40980), (29, 41034), (31, 41055), (40, 41118), (50, 41202), (52, 41241), (54, 41247), (58, 41298), (65, 41394), (79, 41535),

Gene: Rey_63 Start: 41702, Stop: 42604, Start Num: 7
Candidate Starts for Rey_63:
(Start: 7 @41702 has 6 MA's), (Start: 8 @41744 has 16 MA's), (9, 41774), (Start: 12 @41858 has 5 MA's), (14, 41867), (34, 42152), (38, 42170), (40, 42176), (48, 42251), (50, 42260), (52, 42299), (65, 42452), (68, 42503), (77, 42575),

Gene: RoseMarie_61 Start: 42948, Stop: 43808, Start Num: 8
Candidate Starts for RoseMarie_61:
(Start: 8 @42948 has 16 MA's), (Start: 12 @43062 has 5 MA's), (32, 43320), (34, 43356), (38, 43374), (40, 43380), (41, 43386), (50, 43464), (52, 43503), (54, 43509), (56, 43521), (58, 43560), (59, 43563), (65, 43656), (70, 43716), (79, 43797), (80, 43800),

Gene: Schmidt_40 Start: 28005, Stop: 28883, Start Num: 4
Candidate Starts for Schmidt_40:
(Start: 4 @28005 has 20 MA's), (6, 28020), (10, 28146), (Start: 12 @28191 has 5 MA's), (13, 28194), (14, 28200), (15, 28203), (18, 28242), (19, 28284), (21, 28296), (25, 28374), (31, 28446), (33, 28461), (37, 28488), (39, 28497), (42, 28515), (55, 28605), (56, 28617), (57, 28638), (63, 28716), (64, 28722), (74, 28845), (78, 28875),

Gene: Skinny_58 Start: 39921, Stop: 40781, Start Num: 8
Candidate Starts for Skinny_58:
(Start: 8 @39921 has 16 MA's), (Start: 12 @40035 has 5 MA's), (32, 40293), (34, 40329), (38, 40347), (40, 40353), (41, 40359), (43, 40380), (50, 40437), (52, 40476), (54, 40482), (58, 40533), (65, 40629), (68, 40680), (71, 40695), (79, 40770), (80, 40773),

Gene: SlimJimmy_55 Start: 39476, Stop: 40336, Start Num: 8
Candidate Starts for SlimJimmy_55:
(Start: 8 @39476 has 16 MA's), (Start: 12 @39590 has 5 MA's), (32, 39848), (34, 39884), (38, 39902), (40, 39908), (41, 39914), (43, 39935), (50, 39992), (52, 40031), (54, 40037), (58, 40088), (65, 40184), (68, 40235), (71, 40250), (79, 40325), (80, 40328),

Gene: Tesla_63 Start: 36494, Stop: 37447, Start Num: 4
Candidate Starts for Tesla_63:
(Start: 4 @36494 has 20 MA's), (15, 36692), (20, 36785), (22, 36833), (24, 36863), (27, 36914), (31, 36947), (36, 36986), (46, 37076), (48, 37109), (49, 37112), (53, 37160), (56, 37178), (57, 37199), (62, 37265), (63, 37277), (72, 37385),

Gene: TpudiCK_58 Start: 39491, Stop: 40351, Start Num: 8
Candidate Starts for TpudiCK_58:
(Start: 8 @39491 has 16 MA's), (Start: 12 @39605 has 5 MA's), (32, 39863), (34, 39899), (38, 39917), (40, 39923), (41, 39929), (43, 39950), (50, 40007), (52, 40046), (54, 40052), (58, 40103), (65, 40199), (68, 40250), (71, 40265), (79, 40340), (80, 40343),

Gene: TyDawg_56 Start: 39492, Stop: 40352, Start Num: 8
Candidate Starts for TyDawg_56:
(Start: 8 @39492 has 16 MA's), (Start: 12 @39606 has 5 MA's), (32, 39864), (34, 39900), (38, 39918), (40, 39924), (41, 39930), (43, 39951), (50, 40008), (52, 40047), (54, 40053), (58, 40104), (65, 40200), (68, 40251), (71, 40266), (79, 40341), (80, 40344),

Gene: VasuNzinga_65 Start: 36563, Stop: 37516, Start Num: 4
Candidate Starts for VasuNzinga_65:
(1, 36395), (Start: 4 @36563 has 20 MA's), (15, 36761), (20, 36854), (22, 36902), (24, 36932), (27, 36983), (31, 37016), (36, 37055), (46, 37145), (48, 37178), (49, 37181), (53, 37229), (56, 37247), (57, 37268), (62, 37334), (63, 37346), (72, 37454),

Gene: Wildcat_67 Start: 44523, Stop: 45428, Start Num: 7
Candidate Starts for Wildcat_67:
(Start: 7 @44523 has 6 MA's), (11, 44676), (13, 44685), (14, 44691), (17, 44721), (18, 44733), (21, 44784), (26, 44892), (28, 44913), (30, 44928), (35, 44976), (45, 45042), (47, 45051), (51, 45108), (65, 45276), (66, 45294), (72, 45360), (73, 45366), (74, 45381), (79, 45417),