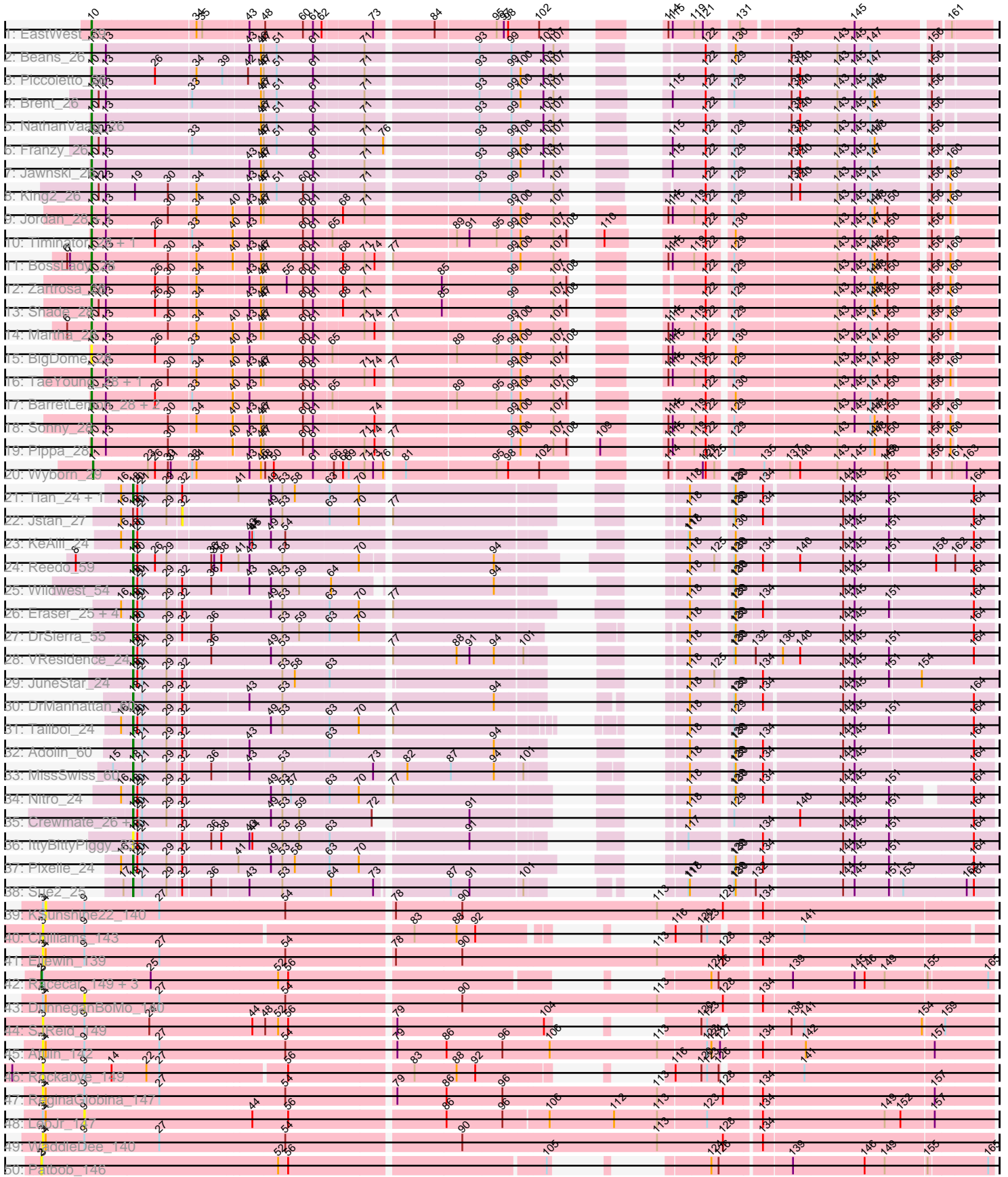


Pham 200242





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 200242 Report

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

Pham number 200242 has 67 members, 20 are drafts.

Phages represented in each track:

- Track 1 : EastWest_29
- Track 2 : Beans_26
- Track 3 : Piccoletto_26
- Track 4 : Brent_26
- Track 5 : NathanVaag_26
- Track 6 : Franzy_26
- Track 7 : Jawnski_26
- Track 8 : King2_26
- Track 9 : Jordan_28, JKerns_28
- Track 10 : Timinator_28, LeeroyJ_28
- Track 11 : BossLady_28
- Track 12 : Zartrosa_28
- Track 13 : Shade_28
- Track 14 : Martha_28
- Track 15 : BigDome_28
- Track 16 : TaeYoung_28, Grekaycon_28
- Track 17 : BarretLemon_28, GravityBall_28, StevieBAY_28
- Track 18 : Sonny_28
- Track 19 : Pippa_28
- Track 20 : Wyborn_29
- Track 21 : Tian_24, Amyev_24
- Track 22 : Jstan_27
- Track 23 : KeAlii_24
- Track 24 : Reedo_59
- Track 25 : Wildwest_54
- Track 26 : Eraser_25, London_25, Asa16_25, Niobe_25, Elezi_25
- Track 27 : DrSierra_55
- Track 28 : VResidence_24
- Track 29 : JuneStar_24
- Track 30 : DrManhattan_60
- Track 31 : Tallboi_24
- Track 32 : Adolin_60
- Track 33 : MissSwiss_60
- Track 34 : Nitro_24
- Track 35 : Crewmate_26, ObiToo_25
- Track 36 : IttyBittyPiggy_23
- Track 37 : Pixelle_24

- Track 38 : Sue2_25
- Track 39 : KSunshine22_140
- Track 40 : Chilliams_143
- Track 41 : Ellewin_139
- Track 42 : Racecar_149, Bloom_152, Talia1610_150, Mimi_154
- Track 43 : DunneganBoMo_140
- Track 44 : SJReid_149
- Track 45 : Atuin_142
- Track 46 : Rockabye_149
- Track 47 : ReginaGlobina_147
- Track 48 : LeoJr_147
- Track 49 : WaddleDee_140
- Track 50 : Patbob_146
- Track 51 : GoldenEssence_135
- Track 52 : Phrampa_142
- Track 53 : Circuit_27

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

The start number called the most often in the published annotations is 10, it was called in 23 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BarretLemon_28, Beans_26, BigDome_28, BossLady_28, Brent_26, EastWest_29, Franzy_26, GravityBall_28, Grekaycon_28, JKerns_28, Jawnski_26, Jordan_28, King2_26, LeeroyJ_28, Martha_28, NathanVaag_26, Piccoletto_26, Pippa_28, Shade_28, Sonny_28, StevieBAY_28, TaeYoung_28, Timinator_28, Zartrosa_28,

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

-

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

- Adolin_60, Amyev_24, Asa16_25, Atuin_142, Bloom_152, Chilliams_143, Circuit_27, Crewmate_26, DrManhattan_60, DrSierra_55, DunneganBoMo_140, Elezi_25, Ellewin_139, Eraser_25, GoldenEssence_135, IttyBittyPiggy_23, Jstan_27, JuneStar_24, KSunshine22_140, KeAlii_24, LeoJr_147, London_25, Mimi_154, MissSwiss_60, Niobe_25, Nitro_24, ObiToo_25, Patbob_146, Phrampa_142, Pixelle_24, Racecar_149, Reedo_59, ReginaGlobina_147, Rockabye_149, SJReid_149, Sue2_25, Talia1610_150, Tallboi_24, Tian_24, VResidence_24, WaddleDee_140, Wildwest_54, Wyborn_29,

Summary by start number:

Start 2:

- Found in 7 of 67 (10.4%) of genes in pham
- Manual Annotations of this start: 2 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bloom_152 (FC), GoldenEssence_135 (FC), Mimi_154 (FC), Patbob_146 (FC), Phrampa_142 (FC), Racecar_149 (FC), Talia1610_150 (FC),

Start 3:

- Found in 17 of 67 (25.4%) of genes in pham
- No Manual Annotations of this start.
- Called 41.2% of time when present
- Phage (with cluster) where this start called: Atuin_142 (FC), Chilliams_143 (FC), Ellewin_139 (FC), ReginaGlobina_147 (FC), Rockabye_149 (FC), SJReid_149 (FC), WaddleDee_140 (FC),

Start 4:

- Found in 7 of 67 (10.4%) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: KSunshine22_140 (FC),

Start 9:

- Found in 10 of 67 (14.9%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: DunneganBoMo_140 (FC), LeoJr_147 (FC),

Start 10:

- Found in 24 of 67 (35.8%) of genes in pham
- Manual Annotations of this start: 23 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BarretLemon_28 (AO2), Beans_26 (AO1), BigDome_28 (AO2), BossLady_28 (AO2), Brent_26 (AO1), EastWest_29 (AO), Franzy_26 (AO1), GravityBall_28 (AO2), Grekaycon_28 (AO2), JKerns_28 (AO2), Jawnski_26 (AO1), Jordan_28 (AO2), King2_26 (AO1), LeeroyJ_28 (AO2), Martha_28 (AO2), NathanVaag_26 (AO1), Piccoletto_26 (AO1), Pippa_28 (AO2), Shade_28 (AO2), Sonny_28 (AO2), StevieBAY_28 (AO2), TaeYoung_28 (AO2), Timinator_28 (AO2), Zartrosa_28 (AO2),

Start 11:

- Found in 2 of 67 (3.0%) 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: Circuit_27 (FH), Wyborn_29 (AO2),

Start 18:

- Found in 24 of 67 (35.8%) of genes in pham
- Manual Annotations of this start: 21 of 47
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Adolin_60 (AZ1), Amyev_24 (AZ1), Asa16_25 (AZ1), Crewmate_26 (AZ1), DrManhattan_60 (AZ1), DrSierra_55 (AZ1), Elezi_25 (AZ1), Eraser_25 (AZ1), IttyBittyPiggy_23 (AZ1), JuneStar_24 (AZ1), KeAlii_24 (AZ1), London_25 (AZ1), MissSwiss_60 (AZ1), Niobe_25 (AZ1), Nitro_24 (AZ1), ObiToo_25 (AZ1), Pixelle_24 (AZ1), Reedo_59 (AZ1), Sue2_25 (AZ1), Tallboi_24 (AZ1), Tian_24 (AZ1), VResidence_24 (AZ1), Wildwest_54 (AZ1),

Start 32:

- Found in 21 of 67 (31.3%) of genes in pham

- No Manual Annotations of this start.
- Called 4.8% of time when present
- Phage (with cluster) where this start called: Jstan_27 (AZ1),

Summary by clusters:

There are 6 clusters represented in this pham: AO, FC, AO2, AO1, FH, AZ1,

Info for manual annotations of cluster AO:

- Start number 10 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 10 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 10 was manually annotated 15 times for cluster AO2.
- Start number 11 was manually annotated 1 time for cluster AO2.

Info for manual annotations of cluster AZ1:

- Start number 18 was manually annotated 21 times for cluster AZ1.

Info for manual annotations of cluster FC:

- Start number 2 was manually annotated 2 times for cluster FC.

Gene Information:

Gene: Adolin_60 Start: 37995, Stop: 39464, Start Num: 18

Candidate Starts for Adolin_60:

(Start: 18 @37995 has 21 MA's), (21, 38013), (29, 38064), (32, 38091), (43, 38211), (63, 38370), (94, 38685), (118, 38880), (129, 38952), (130, 38955), (134, 39006), (144, 39159), (145, 39183), (164, 39423),

Gene: Amyev_24 Start: 20257, Stop: 21768, Start Num: 18

Candidate Starts for Amyev_24:

(16, 20239), (Start: 18 @20257 has 21 MA's), (20, 20266), (21, 20275), (29, 20326), (32, 20353), (41, 20461), (49, 20524), (53, 20548), (58, 20572), (63, 20641), (70, 20701), (118, 21175), (129, 21247), (130, 21250), (134, 21301), (144, 21454), (145, 21478), (151, 21550), (164, 21718),

Gene: Asa16_25 Start: 20493, Stop: 21989, Start Num: 18

Candidate Starts for Asa16_25:

(16, 20475), (Start: 18 @20493 has 21 MA's), (20, 20502), (21, 20511), (29, 20562), (32, 20589), (49, 20760), (53, 20784), (63, 20877), (70, 20937), (77, 20988), (118, 21408), (129, 21480), (130, 21483), (134, 21534), (144, 21687), (145, 21711), (151, 21783), (164, 21951),

Gene: Atuin_142 Start: 98423, Stop: 100324, Start Num: 3

Candidate Starts for Atuin_142:

(3, 98423), (4, 98429), (9, 98510), (27, 98666), (54, 98921), (79, 99134), (86, 99236), (96, 99350), (106, 99440), (113, 99662), (123, 99758), (124, 99767), (127, 99785), (134, 99863), (142, 99947), (157, 100208),

Gene: BarretLemon_28 Start: 23730, Stop: 25319, Start Num: 10

Candidate Starts for BarretLemon_28:

(Start: 10 @23730 has 23 MA's), (13, 23760), (26, 23859), (33, 23928), (40, 24009), (43, 24036), (60, 24147), (61, 24168), (65, 24204), (89, 24426), (95, 24504), (99, 24531), (100, 24549), (107, 24615), (108, 24642), (122, 24798), (130, 24840), (143, 25044), (145, 25080), (147, 25113), (150, 25149), (156, 25221),

Gene: Beans_26 Start: 23393, Stop: 24982, Start Num: 10

Candidate Starts for Beans_26:

(Start: 10 @23393 has 23 MA's), (13, 23423), (43, 23699), (46, 23723), (47, 23729), (51, 23756), (61, 23831), (71, 23930), (93, 24131), (99, 24194), (103, 24260), (107, 24278), (122, 24443), (130, 24485), (138, 24596), (143, 24689), (145, 24725), (147, 24758), (156, 24869),

Gene: BigDome_28 Start: 23719, Stop: 25311, Start Num: 10

Candidate Starts for BigDome_28:

(Start: 10 @23719 has 23 MA's), (13, 23749), (26, 23848), (33, 23917), (40, 23998), (43, 24025), (60, 24136), (61, 24157), (65, 24193), (89, 24415), (95, 24493), (99, 24520), (100, 24538), (107, 24604), (108, 24631), (114, 24712), (115, 24721), (122, 24790), (130, 24832), (143, 25036), (145, 25072), (147, 25105), (150, 25141), (156, 25213),

Gene: Bloom_152 Start: 100610, Stop: 102271, Start Num: 2

Candidate Starts for Bloom_152:

(Start: 2 @100610 has 2 MA's), (3, 100613), (25, 100838), (52, 101096), (56, 101117), (124, 101720), (126, 101735), (139, 101873), (145, 101999), (146, 102020), (149, 102062), (155, 102146), (165, 102263),

Gene: BossLady_28 Start: 23701, Stop: 25299, Start Num: 10

Candidate Starts for BossLady_28:

(6, 23650), (7, 23656), (Start: 10 @23701 has 23 MA's), (13, 23731), (30, 23857), (34, 23908), (40, 23980), (43, 24007), (46, 24031), (47, 24037), (60, 24118), (61, 24139), (68, 24193), (71, 24238), (74, 24259), (77, 24280), (99, 24502), (100, 24520), (107, 24586), (114, 24685), (115, 24691), (119, 24736), (122, 24760), (129, 24799), (143, 25006), (145, 25042), (147, 25075), (148, 25084), (150, 25111), (156, 25186), (160, 25216),

Gene: Brent_26 Start: 23376, Stop: 24986, Start Num: 10

Candidate Starts for Brent_26:

(Start: 10 @23376 has 23 MA's), (12, 23391), (13, 23406), (33, 23574), (46, 23706), (47, 23712), (51, 23739), (61, 23814), (71, 23913), (93, 24114), (99, 24177), (100, 24195), (103, 24243), (107, 24261), (115, 24372), (122, 24441), (129, 24480), (138, 24594), (140, 24612), (143, 24687), (145, 24723), (147, 24756), (148, 24765), (156, 24867),

Gene: Chilliams_143 Start: 89749, Stop: 91368, Start Num: 3

Candidate Starts for Chilliams_143:

(3, 89749), (9, 89836), (83, 90487), (88, 90574), (92, 90613), (116, 90775), (120, 90826), (123, 90838), (141, 91000),

Gene: Circuit_27 Start: 22611, Stop: 24224, Start Num: 11

Candidate Starts for Circuit_27:

(5, 22551), (Start: 11 @22611 has 1 MA's), (22, 22719), (46, 22938), (47, 22944), (67, 23097), (75, 23181), (80, 23235), (111, 23598), (131, 23748), (147, 24003),

Gene: Crewmate_26 Start: 19076, Stop: 20530, Start Num: 18

Candidate Starts for Crewmate_26:

(Start: 18 @19076 has 21 MA's), (20, 19085), (21, 19094), (29, 19145), (32, 19172), (49, 19343), (53, 19367), (59, 19400), (72, 19544), (91, 19697), (118, 19949), (129, 20021), (140, 20141), (144, 20228), (145, 20252), (151, 20324), (164, 20492),

Gene: DrManhattan_60 Start: 37563, Stop: 39020, Start Num: 18

Candidate Starts for DrManhattan_60:

(Start: 18 @37563 has 21 MA's), (21, 37581), (29, 37632), (32, 37659), (43, 37779), (53, 37845), (94, 38253), (118, 38436), (129, 38508), (130, 38511), (134, 38562), (144, 38715), (145, 38739), (164, 38979),

Gene: DrSierra_55 Start: 37478, Stop: 38938, Start Num: 18

Candidate Starts for DrSierra_55:

(Start: 18 @37478 has 21 MA's), (20, 37487), (29, 37547), (32, 37574), (36, 37625), (53, 37769), (59, 37802), (63, 37862), (70, 37922), (118, 38354), (129, 38426), (130, 38429), (144, 38633), (145, 38657), (164, 38897),

Gene: DunneganBoMo_140 Start: 95104, Stop: 96927, Start Num: 9

Candidate Starts for DunneganBoMo_140:

(3, 95017), (4, 95023), (9, 95104), (27, 95260), (54, 95515), (90, 95866), (113, 96259), (128, 96394), (134, 96466),

Gene: EastWest_29 Start: 23578, Stop: 25173, Start Num: 10

Candidate Starts for EastWest_29:

(Start: 10 @23578 has 23 MA's), (34, 23785), (35, 23797), (43, 23884), (48, 23917), (60, 23995), (61, 24016), (62, 24034), (73, 24133), (84, 24241), (95, 24352), (97, 24367), (98, 24376), (102, 24436), (114, 24568), (115, 24577), (119, 24622), (121, 24640), (131, 24697), (145, 24916), (161, 25093),

Gene: Elezi_25 Start: 20494, Stop: 21990, Start Num: 18

Candidate Starts for Elezi_25:

(16, 20476), (Start: 18 @20494 has 21 MA's), (20, 20503), (21, 20512), (29, 20563), (32, 20590), (49, 20761), (53, 20785), (63, 20878), (70, 20938), (77, 20989), (118, 21409), (129, 21481), (130, 21484), (134, 21535), (144, 21688), (145, 21712), (151, 21784), (164, 21952),

Gene: Ellewin_139 Start: 94866, Stop: 96776, Start Num: 3

Candidate Starts for Ellewin_139:

(3, 94866), (4, 94872), (9, 94953), (27, 95109), (54, 95364), (78, 95577), (90, 95715), (113, 96108), (128, 96243), (134, 96315),

Gene: Eraser_25 Start: 20494, Stop: 21996, Start Num: 18

Candidate Starts for Eraser_25:

(16, 20476), (Start: 18 @20494 has 21 MA's), (20, 20503), (21, 20512), (29, 20563), (32, 20590), (49, 20761), (53, 20785), (63, 20878), (70, 20938), (77, 20989), (118, 21415), (129, 21487), (130, 21490), (134, 21541), (144, 21694), (145, 21718), (151, 21790), (164, 21958),

Gene: Franzy_26 Start: 23375, Stop: 24985, Start Num: 10

Candidate Starts for Franzy_26:

(Start: 10 @23375 has 23 MA's), (12, 23390), (13, 23405), (33, 23573), (46, 23705), (47, 23711), (51, 23738), (61, 23813), (71, 23912), (76, 23951), (93, 24113), (99, 24176), (100, 24194), (103, 24242), (107, 24260), (115, 24371), (122, 24440), (129, 24479), (138, 24593), (140, 24611), (143, 24686), (145, 24722), (147, 24755), (148, 24764), (156, 24866),

Gene: GoldenEssence_135 Start: 94005, Stop: 95666, Start Num: 2

Candidate Starts for GoldenEssence_135:

(Start: 2 @94005 has 2 MA's), (3, 94008), (25, 94233), (52, 94491), (56, 94512), (124, 95115), (126, 95130), (139, 95268), (146, 95415), (155, 95541), (165, 95658),

Gene: GravityBall_28 Start: 23729, Stop: 25318, Start Num: 10

Candidate Starts for GravityBall_28:

(Start: 10 @23729 has 23 MA's), (13, 23759), (26, 23858), (33, 23927), (40, 24008), (43, 24035), (60, 24146), (61, 24167), (65, 24203), (89, 24425), (95, 24503), (99, 24530), (100, 24548), (107, 24614), (108, 24641), (122, 24797), (130, 24839), (143, 25043), (145, 25079), (147, 25112), (150, 25148), (156, 25220),

Gene: Grekaycon_28 Start: 23647, Stop: 25245, Start Num: 10

Candidate Starts for Grekaycon_28:

(Start: 10 @23647 has 23 MA's), (13, 23677), (30, 23803), (34, 23854), (40, 23926), (43, 23953), (46, 23977), (47, 23983), (60, 24064), (61, 24085), (71, 24184), (74, 24205), (77, 24226), (99, 24448), (100, 24466), (107, 24532), (114, 24631), (115, 24637), (119, 24682), (122, 24706), (129, 24745), (143, 24952), (145, 24988), (147, 25021), (150, 25057), (156, 25132), (160, 25162),

Gene: IttyBittyPiggy_23 Start: 18356, Stop: 19831, Start Num: 18

Candidate Starts for IttyBittyPiggy_23:

(Start: 18 @18356 has 21 MA's), (20, 18365), (21, 18374), (32, 18452), (36, 18503), (38, 18524), (43, 18581), (44, 18587), (53, 18647), (59, 18680), (63, 18740), (91, 19001), (117, 19235), (134, 19364), (144, 19517), (145, 19541), (151, 19613), (164, 19781),

Gene: JKerns_28 Start: 23674, Stop: 25272, Start Num: 10

Candidate Starts for JKerns_28:

(Start: 10 @23674 has 23 MA's), (13, 23704), (30, 23830), (34, 23881), (40, 23953), (43, 23980), (46, 24004), (47, 24010), (60, 24091), (61, 24112), (68, 24166), (71, 24211), (99, 24475), (100, 24493), (107, 24559), (114, 24658), (115, 24664), (119, 24709), (122, 24733), (129, 24772), (143, 24979), (145, 25015), (147, 25048), (148, 25057), (150, 25084), (156, 25159), (160, 25189),

Gene: Jawnski_26 Start: 23388, Stop: 24995, Start Num: 10

Candidate Starts for Jawnski_26:

(Start: 10 @23388 has 23 MA's), (13, 23418), (43, 23694), (46, 23718), (47, 23724), (61, 23826), (71, 23925), (93, 24126), (99, 24189), (100, 24207), (103, 24255), (107, 24273), (115, 24387), (122, 24456), (129, 24495), (138, 24609), (140, 24627), (143, 24702), (145, 24738), (147, 24771), (156, 24882), (160, 24912),

Gene: Jordan_28 Start: 23644, Stop: 25242, Start Num: 10

Candidate Starts for Jordan_28:

(Start: 10 @23644 has 23 MA's), (13, 23674), (30, 23800), (34, 23851), (40, 23923), (43, 23950), (46, 23974), (47, 23980), (60, 24061), (61, 24082), (68, 24136), (71, 24181), (99, 24445), (100, 24463), (107, 24529), (114, 24628), (115, 24634), (119, 24679), (122, 24703), (129, 24742), (143, 24949), (145, 24985), (147, 25018), (148, 25027), (150, 25054), (156, 25129), (160, 25159),

Gene: Jstan_27 Start: 20590, Stop: 21990, Start Num: 32

Candidate Starts for Jstan_27:

(16, 20476), (Start: 18 @20494 has 21 MA's), (20, 20503), (21, 20512), (29, 20563), (32, 20590), (49, 20761), (53, 20785), (63, 20878), (70, 20938), (77, 20989), (118, 21409), (129, 21481), (130, 21484), (134, 21535), (144, 21688), (145, 21712), (151, 21784), (164, 21952),

Gene: JuneStar_24 Start: 20659, Stop: 22146, Start Num: 18

Candidate Starts for JuneStar_24:

(Start: 18 @20659 has 21 MA's), (20, 20668), (21, 20677), (29, 20728), (32, 20755), (53, 20950), (58, 20974), (63, 21043), (118, 21541), (125, 21589), (134, 21667), (144, 21832), (145, 21856), (151, 21928), (154, 21991),

Gene: KSunshine22_140 Start: 96432, Stop: 98336, Start Num: 4

Candidate Starts for KSunshine22_140:

(3, 96426), (4, 96432), (9, 96513), (27, 96669), (54, 96924), (78, 97137), (90, 97275), (113, 97668), (128, 97803), (134, 97875),

Gene: KeAlii_24 Start: 18542, Stop: 20020, Start Num: 18

Candidate Starts for KeAlii_24:

(16, 18524), (Start: 18 @18542 has 21 MA's), (20, 18551), (43, 18767), (44, 18773), (45, 18776), (49, 18809), (54, 18839), (117, 19433), (118, 19436), (130, 19511), (144, 19715), (145, 19739), (151, 19811), (164, 19979),

Gene: King2_26 Start: 23393, Stop: 24982, Start Num: 10

Candidate Starts for King2_26:

(Start: 10 @23393 has 23 MA's), (12, 23408), (13, 23423), (19, 23480), (30, 23549), (34, 23600), (43, 23699), (46, 23723), (47, 23729), (51, 23756), (60, 23810), (61, 23831), (71, 23930), (93, 24131), (99, 24194), (107, 24278), (122, 24443), (129, 24482), (138, 24596), (140, 24614), (143, 24689), (145, 24725), (147, 24758), (156, 24869), (160, 24899),

Gene: LeeroyJ_28 Start: 23729, Stop: 25318, Start Num: 10

Candidate Starts for LeeroyJ_28:

(Start: 10 @23729 has 23 MA's), (13, 23759), (26, 23858), (33, 23927), (40, 24008), (43, 24035), (60, 24146), (61, 24167), (65, 24203), (89, 24425), (91, 24449), (95, 24503), (99, 24530), (100, 24548), (107, 24614), (108, 24641), (110, 24662), (122, 24797), (130, 24839), (143, 25043), (145, 25079), (147, 25112), (150, 25148), (156, 25220),

Gene: LeoJr_147 Start: 99111, Stop: 100919, Start Num: 9

Candidate Starts for LeoJr_147:

(3, 99024), (4, 99030), (9, 99111), (44, 99456), (56, 99528), (86, 99837), (96, 99951), (106, 100035), (112, 100167), (113, 100257), (123, 100353), (134, 100458), (149, 100704), (152, 100737), (157, 100803),

Gene: London_25 Start: 20494, Stop: 21990, Start Num: 18

Candidate Starts for London_25:

(16, 20476), (Start: 18 @20494 has 21 MA's), (20, 20503), (21, 20512), (29, 20563), (32, 20590), (49, 20761), (53, 20785), (63, 20878), (70, 20938), (77, 20989), (118, 21409), (129, 21481), (130, 21484), (134, 21535), (144, 21688), (145, 21712), (151, 21784), (164, 21952),

Gene: Martha_28 Start: 23648, Stop: 25246, Start Num: 10

Candidate Starts for Martha_28:

(6, 23597), (Start: 10 @23648 has 23 MA's), (13, 23678), (30, 23804), (34, 23855), (40, 23927), (43, 23954), (46, 23978), (47, 23984), (60, 24065), (61, 24086), (71, 24185), (74, 24206), (77, 24227), (99, 24449), (100, 24467), (107, 24533), (114, 24632), (115, 24638), (119, 24683), (122, 24707), (129, 24746), (143, 24953), (145, 24989), (147, 25022), (150, 25058), (156, 25133), (160, 25163),

Gene: Mimi_154 Start: 99675, Stop: 101336, Start Num: 2

Candidate Starts for Mimi_154:

(Start: 2 @99675 has 2 MA's), (3, 99678), (25, 99903), (52, 100161), (56, 100182), (124, 100785), (126, 100800), (139, 100938), (145, 101064), (146, 101085), (149, 101127), (155, 101211), (165, 101328),

Gene: MissSwiss_60 Start: 37830, Stop: 39293, Start Num: 18

Candidate Starts for MissSwiss_60:

(15, 37791), (Start: 18 @37830 has 21 MA's), (21, 37848), (29, 37899), (32, 37926), (36, 37977), (43, 38046), (53, 38112), (73, 38292), (82, 38343), (87, 38433), (94, 38520), (101, 38574), (118, 38709), (129, 38781), (130, 38784), (134, 38835), (144, 38988), (145, 39012), (164, 39252),

Gene: NathanVaag_26 Start: 23369, Stop: 24958, Start Num: 10

Candidate Starts for NathanVaag_26:

(Start: 10 @23369 has 23 MA's), (13, 23399), (46, 23699), (47, 23705), (51, 23732), (61, 23807), (71, 23906), (93, 24107), (99, 24170), (103, 24236), (107, 24254), (122, 24419), (138, 24572), (140, 24590), (143, 24665), (145, 24701), (147, 24734), (156, 24845),

Gene: Niobe_25 Start: 20494, Stop: 21990, Start Num: 18

Candidate Starts for Niobe_25:

(16, 20476), (Start: 18 @20494 has 21 MA's), (20, 20503), (21, 20512), (29, 20563), (32, 20590), (49, 20761), (53, 20785), (63, 20878), (70, 20938), (77, 20989), (118, 21409), (129, 21481), (130, 21484), (134, 21535), (144, 21688), (145, 21712), (151, 21784), (164, 21952),

Gene: Nitro_24 Start: 19868, Stop: 21319, Start Num: 18

Candidate Starts for Nitro_24:

(16, 19850), (Start: 18 @19868 has 21 MA's), (20, 19877), (21, 19886), (29, 19937), (32, 19964), (49, 20135), (53, 20159), (57, 20177), (63, 20252), (70, 20312), (77, 20363), (118, 20771), (129, 20843), (130, 20846), (134, 20897), (144, 21050), (145, 21074), (151, 21146), (164, 21281),

Gene: ObiToo_25 Start: 18813, Stop: 20267, Start Num: 18

Candidate Starts for ObiToo_25:

(Start: 18 @18813 has 21 MA's), (20, 18822), (21, 18831), (29, 18882), (32, 18909), (49, 19080), (53, 19104), (59, 19137), (72, 19281), (91, 19434), (118, 19686), (129, 19758), (140, 19878), (144, 19965), (145, 19989), (151, 20061), (164, 20229),

Gene: Patbob_146 Start: 100134, Stop: 101795, Start Num: 2

Candidate Starts for Patbob_146:

(Start: 2 @100134 has 2 MA's), (3, 100137), (52, 100620), (56, 100641), (105, 101136), (124, 101244), (126, 101259), (139, 101397), (146, 101544), (149, 101586), (155, 101670), (165, 101787),

Gene: Phrampa_142 Start: 101793, Stop: 103436, Start Num: 2

Candidate Starts for Phrampa_142:

(Start: 2 @101793 has 2 MA's), (3, 101796), (22, 102012), (28, 102048), (47, 102255), (56, 102306), (87, 102618), (126, 102900), (133, 102972), (146, 103185),

Gene: Piccoletto_26 Start: 23368, Stop: 24960, Start Num: 10

Candidate Starts for Piccoletto_26:

(Start: 10 @23368 has 23 MA's), (13, 23398), (26, 23497), (34, 23575), (39, 23629), (42, 23671), (46, 23698), (47, 23704), (51, 23731), (61, 23806), (71, 23905), (93, 24106), (99, 24169), (100, 24187), (103, 24235), (107, 24253), (122, 24421), (129, 24460), (138, 24574), (140, 24592), (143, 24667), (145, 24703), (147, 24736), (156, 24847),

Gene: Pippa_28 Start: 23773, Stop: 25371, Start Num: 10

Candidate Starts for Pippa_28:

(Start: 10 @23773 has 23 MA's), (13, 23803), (30, 23929), (40, 24052), (43, 24079), (46, 24103), (47, 24109), (60, 24190), (61, 24211), (71, 24310), (74, 24331), (77, 24352), (99, 24574), (100, 24592), (107, 24658), (108, 24685), (109, 24697), (114, 24757), (115, 24763), (119, 24808), (122, 24832),

(129, 24871), (143, 25078), (147, 25147), (148, 25156), (150, 25183), (156, 25258), (160, 25288),

Gene: Pixelle_24 Start: 20263, Stop: 21774, Start Num: 18

Candidate Starts for Pixelle_24:

(16, 20245), (Start: 18 @20263 has 21 MA's), (20, 20272), (21, 20281), (29, 20332), (32, 20359), (41, 20467), (49, 20530), (53, 20554), (58, 20578), (63, 20647), (70, 20707), (129, 21253), (130, 21256), (134, 21307), (144, 21460), (145, 21484), (151, 21556), (164, 21724),

Gene: Racecar_149 Start: 100663, Stop: 102324, Start Num: 2

Candidate Starts for Racecar_149:

(Start: 2 @100663 has 2 MA's), (3, 100666), (25, 100891), (52, 101149), (56, 101170), (124, 101773), (126, 101788), (139, 101926), (145, 102052), (146, 102073), (149, 102115), (155, 102199), (165, 102316),

Gene: Reedo_59 Start: 37394, Stop: 38914, Start Num: 18

Candidate Starts for Reedo_59:

(8, 37280), (Start: 18 @37394 has 21 MA's), (20, 37403), (26, 37439), (29, 37463), (36, 37541), (37, 37547), (38, 37562), (41, 37598), (43, 37619), (53, 37685), (70, 37838), (94, 38087), (118, 38330), (125, 38378), (129, 38402), (130, 38405), (134, 38456), (140, 38522), (144, 38609), (145, 38633), (151, 38705), (158, 38798), (162, 38834), (164, 38873),

Gene: ReginaGlobina_147 Start: 99503, Stop: 101404, Start Num: 3

Candidate Starts for ReginaGlobina_147:

(3, 99503), (4, 99509), (9, 99590), (27, 99746), (54, 100001), (79, 100214), (86, 100316), (96, 100430), (113, 100742), (128, 100871), (134, 100943), (157, 101288),

Gene: Rockabye_149 Start: 91370, Stop: 93013, Start Num: 3

Candidate Starts for Rockabye_149:

(1, 91307), (3, 91370), (9, 91457), (14, 91514), (22, 91586), (27, 91613), (56, 91865), (83, 92108), (88, 92195), (92, 92234), (116, 92408), (120, 92459), (123, 92471), (126, 92492), (141, 92633),

Gene: SJReid_149 Start: 89888, Stop: 91558, Start Num: 3

Candidate Starts for SJReid_149:

(3, 89888), (9, 89975), (24, 90110), (44, 90320), (48, 90344), (52, 90371), (56, 90392), (79, 90599), (104, 90902), (120, 91004), (123, 91016), (138, 91151), (141, 91178), (154, 91421), (159, 91463),

Gene: Shade_28 Start: 23623, Stop: 25212, Start Num: 10

Candidate Starts for Shade_28:

(Start: 10 @23623 has 23 MA's), (12, 23638), (13, 23653), (26, 23752), (30, 23779), (34, 23830), (43, 23929), (46, 23953), (47, 23959), (60, 24040), (61, 24061), (68, 24115), (71, 24160), (85, 24298), (99, 24424), (107, 24508), (108, 24535), (122, 24673), (129, 24712), (143, 24919), (145, 24955), (147, 24988), (148, 24997), (150, 25024), (156, 25099), (160, 25129),

Gene: Sonny_28 Start: 23644, Stop: 25242, Start Num: 10

Candidate Starts for Sonny_28:

(Start: 10 @23644 has 23 MA's), (13, 23674), (30, 23800), (34, 23851), (40, 23923), (43, 23950), (46, 23974), (47, 23980), (60, 24061), (61, 24082), (74, 24202), (99, 24445), (100, 24463), (107, 24529), (114, 24628), (115, 24634), (119, 24679), (122, 24703), (129, 24742), (143, 24949), (145, 24985), (147, 25018), (148, 25027), (150, 25054), (156, 25129), (160, 25159),

Gene: StevieBAY_28 Start: 23729, Stop: 25318, Start Num: 10

Candidate Starts for StevieBAY_28:

(Start: 10 @23729 has 23 MA's), (13, 23759), (26, 23858), (33, 23927), (40, 24008), (43, 24035), (60, 24146), (61, 24167), (65, 24203), (89, 24425), (95, 24503), (99, 24530), (100, 24548), (107, 24614), (108, 24641), (122, 24797), (130, 24839), (143, 25043), (145, 25079), (147, 25112), (150, 25148), (156, 25220),

Gene: Sue2_25 Start: 19348, Stop: 20793, Start Num: 18

Candidate Starts for Sue2_25:

(17, 19333), (Start: 18 @19348 has 21 MA's), (21, 19366), (29, 19417), (32, 19444), (36, 19495), (43, 19564), (53, 19630), (64, 19726), (73, 19810), (87, 19939), (91, 19975), (101, 20077), (117, 20203), (118, 20206), (129, 20278), (130, 20281), (132, 20317), (144, 20485), (145, 20509), (151, 20581), (153, 20605), (163, 20737), (164, 20752),

Gene: TaeYoung_28 Start: 23648, Stop: 25246, Start Num: 10

Candidate Starts for TaeYoung_28:

(Start: 10 @23648 has 23 MA's), (13, 23678), (30, 23804), (34, 23855), (40, 23927), (43, 23954), (46, 23978), (47, 23984), (60, 24065), (61, 24086), (71, 24185), (74, 24206), (77, 24227), (99, 24449), (100, 24467), (107, 24533), (114, 24632), (115, 24638), (119, 24683), (122, 24707), (129, 24746), (143, 24953), (145, 24989), (147, 25022), (150, 25058), (156, 25133), (160, 25163),

Gene: Talia1610_150 Start: 100678, Stop: 102339, Start Num: 2

Candidate Starts for Talia1610_150:

(Start: 2 @100678 has 2 MA's), (3, 100681), (25, 100906), (52, 101164), (56, 101185), (124, 101788), (126, 101803), (139, 101941), (145, 102067), (146, 102088), (149, 102130), (155, 102214), (165, 102331),

Gene: Tallboi_24 Start: 19849, Stop: 21330, Start Num: 18

Candidate Starts for Tallboi_24:

(16, 19831), (Start: 18 @19849 has 21 MA's), (20, 19858), (21, 19867), (29, 19918), (32, 19945), (49, 20116), (53, 20140), (63, 20233), (70, 20293), (77, 20341), (118, 20737), (129, 20809), (144, 21016), (145, 21040), (151, 21112), (164, 21280),

Gene: Tian_24 Start: 20257, Stop: 21768, Start Num: 18

Candidate Starts for Tian_24:

(16, 20239), (Start: 18 @20257 has 21 MA's), (20, 20266), (21, 20275), (29, 20326), (32, 20353), (41, 20461), (49, 20524), (53, 20548), (58, 20572), (63, 20641), (70, 20701), (118, 21175), (129, 21247), (130, 21250), (134, 21301), (144, 21454), (145, 21478), (151, 21550), (164, 21718),

Gene: Timinator_28 Start: 23729, Stop: 25318, Start Num: 10

Candidate Starts for Timinator_28:

(Start: 10 @23729 has 23 MA's), (13, 23759), (26, 23858), (33, 23927), (40, 24008), (43, 24035), (60, 24146), (61, 24167), (65, 24203), (89, 24425), (91, 24449), (95, 24503), (99, 24530), (100, 24548), (107, 24614), (108, 24641), (110, 24662), (122, 24797), (130, 24839), (143, 25043), (145, 25079), (147, 25112), (150, 25148), (156, 25220),

Gene: VResidence_24 Start: 18581, Stop: 20053, Start Num: 18

Candidate Starts for VResidence_24:

(Start: 18 @18581 has 21 MA's), (20, 18590), (21, 18599), (29, 18650), (36, 18728), (49, 18848), (53, 18872), (77, 19076), (88, 19205), (91, 19229), (94, 19277), (101, 19331), (118, 19469), (129, 19541), (130, 19544), (132, 19580), (136, 19625), (140, 19661), (144, 19748), (145, 19772), (151, 19844), (164, 20012),

Gene: WaddleDee_140 Start: 94203, Stop: 96113, Start Num: 3

Candidate Starts for WaddleDee_140:

(3, 94203), (4, 94209), (9, 94290), (27, 94446), (54, 94701), (90, 95052), (113, 95445), (128, 95580), (134, 95652),

Gene: Wildwest_54 Start: 38561, Stop: 40003, Start Num: 18

Candidate Starts for Wildwest_54:

(Start: 18 @38561 has 21 MA's), (20, 38570), (21, 38579), (29, 38630), (32, 38657), (36, 38708), (43, 38777), (49, 38819), (53, 38843), (59, 38876), (64, 38939), (94, 39224), (118, 39419), (129, 39491), (130, 39494), (144, 39698), (145, 39722), (164, 39962),

Gene: Wyborn_29 Start: 23980, Stop: 25587, Start Num: 11

Candidate Starts for Wyborn_29:

(Start: 11 @23980 has 1 MA's), (23, 24091), (26, 24103), (30, 24130), (31, 24133), (33, 24172), (34, 24181), (43, 24283), (46, 24307), (48, 24316), (50, 24334), (61, 24415), (66, 24454), (68, 24469), (69, 24481), (71, 24514), (73, 24532), (76, 24553), (81, 24580), (95, 24754), (98, 24778), (102, 24838), (114, 24967), (121, 25030), (122, 25036), (125, 25051), (135, 25138), (137, 25186), (140, 25207), (143, 25282), (145, 25318), (149, 25381), (150, 25387), (156, 25462), (161, 25495), (163, 25522),

Gene: Zartrosa_28 Start: 23647, Stop: 25236, Start Num: 10

Candidate Starts for Zartrosa_28:

(Start: 10 @23647 has 23 MA's), (13, 23677), (26, 23776), (30, 23803), (34, 23854), (43, 23953), (46, 23977), (47, 23983), (55, 24031), (60, 24064), (61, 24085), (68, 24139), (71, 24184), (85, 24322), (99, 24448), (107, 24532), (108, 24559), (122, 24697), (129, 24736), (143, 24943), (145, 24979), (147, 25012), (148, 25021), (150, 25048), (156, 25123), (160, 25153),