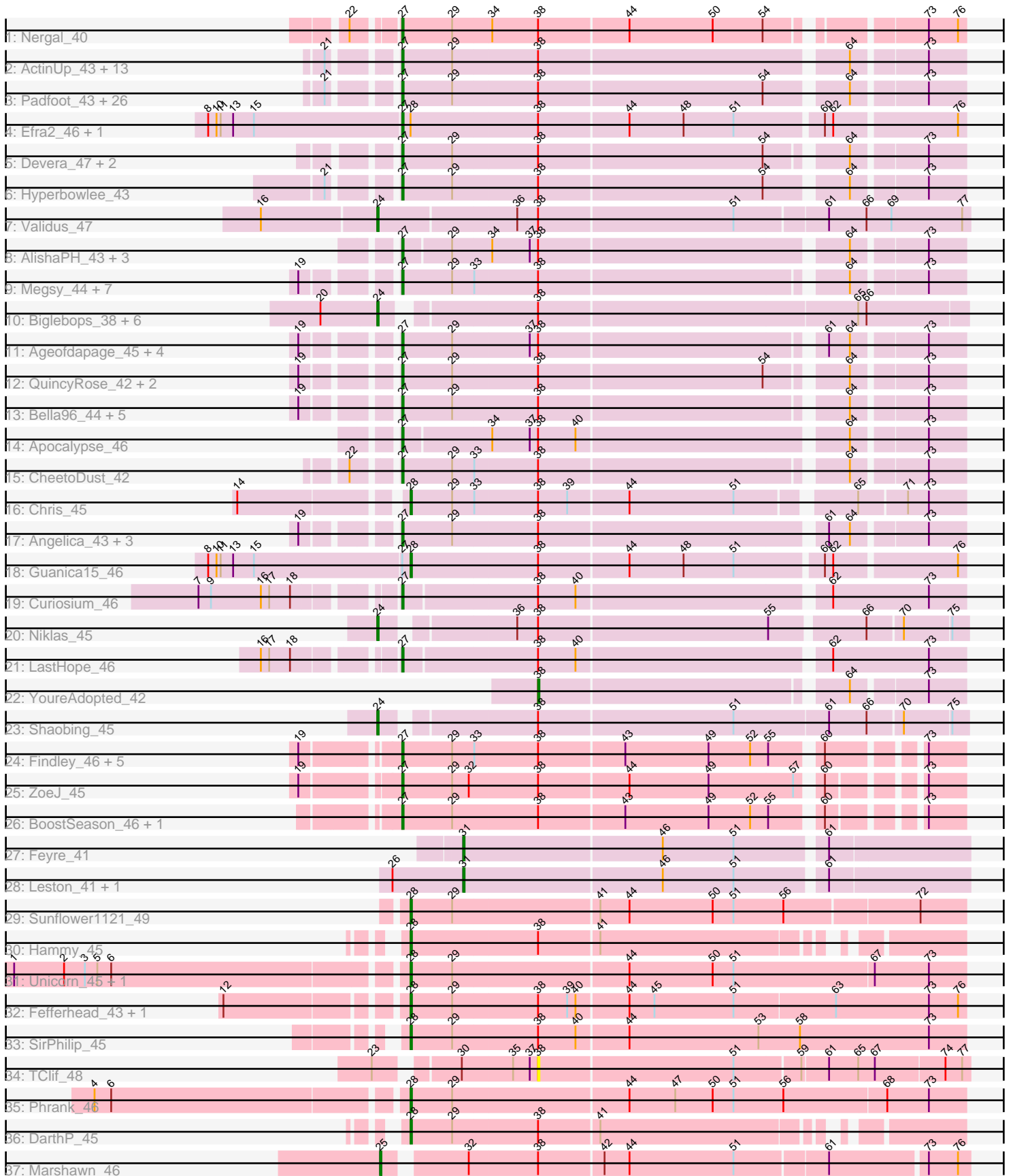


Pham 171312



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 171312 Report

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

Pham number 171312 has 118 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Nergal_40
- Track 2 : ActinUp_43, Jayhawk_44, BarrelRoll_43, Ramen_43, Adephagia_43, TruffulaTree_43, Slimphazie_43, Veliki_43, Padpat_44, Rapunzel97_43, HedwigODU_43, Tachez_43, Atiba_43, Emerson_44
- Track 3 : Padfoot_43, Topper_43, Llorens_43, BGIlluviae_43, Dalmuri_43, CaseJules_44, Jeckyll_43, Rosmarinus_43, CREW_43, Boiiii_43, Joy99_43, Asayake_43, BEEST_43, Blizzard_43, Belladonna_43, Homura_43, Inky_43, Spock_43, JAWS_43, Lunahalos_43, Capricorn_43, ShiaSurprise_44, Durfee_43, Piatt_43, Jarvi_43, Twitch_43, Peel_43
- Track 4 : Efra2_46, Yunkel11_46
- Track 5 : Devera_47, Illumine_46, Dole_46
- Track 6 : Hyperbowlee_43
- Track 7 : Validus_47
- Track 8 : AlishaPH_43, Geraldini_45, BaghaKamala_42, Pokerus_42
- Track 9 : Megsy_44, LindNT_43, Zavala_44, Prithvi_44, Mynx_44, TreyKay_44, CrimD_43, TaiwanKao_45
- Track 10 : Biglebops_38, Nikao_41, Amelie_38, SgtBeansprout_38, Nutello_38, Mdavu_39, Enkosi_41
- Track 11 : Ageofdapage_45, Adonis_43, LaterM_44, Stinson_44, Murucutumbu_44
- Track 12 : QuincyRose_42, MeaningOfLife_44, Ganymede_44
- Track 13 : Bella96_44, Beezoo_45, Urkel_44, SamuelLPlaqson_44, TiniBug_44, DrHayes_44
- Track 14 : Apocalypse_46
- Track 15 : CheetoDust_42
- Track 16 : Chris_45
- Track 17 : Angelica_43, Anaya_45, Deby_43, Sulley_43
- Track 18 : Guanica15_46
- Track 19 : Curiosium_46
- Track 20 : Niklas_45
- Track 21 : LastHope_46
- Track 22 : YoureAdopted_42
- Track 23 : Shaobing_45
- Track 24 : Findley_46, Strobilo_46, DismalStressor_46, Milly_46, Marcoliusprime_46, DismalFunk_46
- Track 25 : ZoeJ_45
- Track 26 : BoostSeason_46, Mufasa_46
- Track 27 : Feyre_41

- Track 28 : Leston_41, Miryou_44
- Track 29 : Sunflower1121_49
- Track 30 : Hammy_45
- Track 31 : Unicorn_45, PhelpsODU_45
- Track 32 : Fefferhead_43, Ellie_41
- Track 33 : SirPhilip_45
- Track 34 : TClif_48
- Track 35 : Phrank_46
- Track 36 : DarthP_45
- Track 37 : Marshawn_46

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

The start number called the most often in the published annotations is 27, it was called in 88 of the 113 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp_43, Adephagia_43, Adonis_43, Ageofdapage_45, AlishaPH_43, Anaya_45, Angelica_43, Apocalypse_46, Asayake_43, Atiba_43, BEEST_43, BGlluviae_43, BaghaKamala_42, BarrelRoll_43, Beezoo_45, Bella96_44, Belladonna_43, Blizzard_43, Boiiii_43, BoostSeason_46, CREW_43, Capricorn_43, CaseJules_44, CheetoDust_42, CrimD_43, Curiosium_46, Dalmuri_43, Deby_43, Devera_47, DismalFunk_46, DismalStressor_46, Dole_46, DrHayes_44, Durfee_43, Efra2_46, Emerson_44, Findley_46, Ganymede_44, Geraldini_45, HedwigODU_43, Homura_43, Hyperbowlee_43, Illumine_46, Inky_43, JAWS_43, Jarvi_43, Jayhawk_44, Jeckyll_43, Joy99_43, LastHope_46, LaterM_44, LindNT_43, Llorens_43, Lunahalos_43, Marcoliusprime_46, MeaningOfLife_44, Megsy_44, Milly_46, Mufasa_46, Murucutumbu_44, Mynx_44, Nergal_40, Padfoot_43, Padpat_44, Peel_43, Piatt_43, Pokerus_42, Prithvi_44, QuincyRose_42, Ramen_43, Rapunzel97_43, Rosmarinus_43, SamuelLPlaqson_44, ShiaSurprise_44, Slimphazie_43, Spock_43, Stinson_44, Strobilo_46, Sulley_43, Tachez_43, TaiwanKao_45, TiniBug_44, Topper_43, TreyKay_44, TruffulaTree_43, Twitch_43, Urkel_44, Veliki_43, Yunkel11_46, Zavala_44, ZoeJ_45,

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

- Guanica15_46,

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

- Amelie_38, Biglebops_38, Chris_45, DarthP_45, Ellie_41, Enkosi_41, Fefferhead_43, Feyre_41, Hammy_45, Leston_41, Marshawn_46, Mdavu_39, Miryou_44, Nikao_41, Niklas_45, Nutello_38, PhelpsODU_45, Phrank_46, SgtBeansprout_38, Shaobing_45, SirPhilip_45, Sunflower1121_49, TClif_48, Unicorn_45, Validus_47, YoureAdopted_42,

Summary by start number:

Start 24:

- Found in 10 of 118 (8.5%) of genes in pham
- Manual Annotations of this start: 10 of 113
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Amelie_38 (K1), Binglebops_38 (K1), Enkosi_41 (K1), Mdavu_39 (K1), Nikao_41 (K1), Niklas_45 (K1), Nutello_38 (K1), SgtBeansprout_38 (K1), Shaobing_45 (K1), Validus_47 (K1),

Start 25:

- Found in 1 of 118 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn_46 (K6),

Start 27:

- Found in 92 of 118 (78.0%) of genes in pham
- Manual Annotations of this start: 88 of 113
- Called 98.9% of time when present
- Phage (with cluster) where this start called: ActinUp_43 (K1), Adephagia_43 (K1), Adonis_43 (K1), Ageofdapage_45 (K1), AlishaPH_43 (K1), Anaya_45 (K1), Angelica_43 (K1), Apocalypse_46 (K1), Asayake_43 (K1), Atiba_43 (K1), BEEST_43 (K1), BGlluviae_43 (K1), BaghaKamala_42 (K1), BarrelRoll_43 (K1), Beezoo_45 (K1), Bella96_44 (K1), Belladonna_43 (K1), Blizzard_43 (K1), Boiiii_43 (K1), BoostSeason_46 (K2), CREW_43 (K1), Capricorn_43 (K1), CaseJules_44 (K1), CheetoDust_42 (K1), CrimD_43 (K1), Curiosium_46 (K1), Dalmuri_43 (K1), Deby_43 (K1), Devera_47 (K1), DismalFunk_46 (K2), DismalStressor_46 (K2), Dole_46 (K1), DrHayes_44 (K1), Durfee_43 (K1), Efra2_46 (K1), Emerson_44 (K1), Findley_46 (K2), Ganymede_44 (K1), Geraldini_45 (K1), HedwigODU_43 (K1), Homura_43 (K1), Hyperbowlee_43 (K1), Illumine_46 (K1), Inky_43 (K1), JAWS_43 (K1), Jarvi_43 (K1), Jayhawk_44 (K1), Jeckyll_43 (K1), Joy99_43 (K1), LastHope_46 (K1), LaterM_44 (K1), LindNT_43 (K1), Llorens_43 (K1), Lunahalos_43 (K1), Marcoliusprime_46 (K2), MeaningOfLife_44 (K1), Megsy_44 (K1), Milly_46 (K2), Mufasa_46 (K2), Murucutumbu_44 (K1), Mynx_44 (K1), Nergal_40 (AG), Padfoot_43 (K1), Padpat_44 (K1), Peel_43 (K1), Piatt_43 (K1), Pokerus_42 (K1), Prithvi_44 (K1), QuincyRose_42 (K1), Ramen_43 (K1), Rapunzel97_43 (K1), Rosmarinus_43 (K1), SamuelLPlaqson_44 (K1), ShiaSurprise_44 (K1), Slimphazie_43 (K1), Spock_43 (K1), Stinson_44 (K1), Strobilo_46 (K2), Sulley_43 (K1), Tachez_43 (K1), TaiwanKao_45 (K1), TiniBug_44 (K1), Topper_43 (K1), TreyKay_44 (K1), TruffulaTree_43 (K1), Twitch_43 (K1), Urkel_44 (K1), Veliki_43 (K1), Yunkel11_46 (K1), Zavala_44 (K1), ZoeJ_45 (K2),

Start 28:

- Found in 13 of 118 (11.0%) of genes in pham
- Manual Annotations of this start: 11 of 113
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Chris_45 (K1), DARTH_P_45 (K6), Ellie_41 (K6), Fefferhead_43 (K6), Guanica15_46 (K1), Hammy_45 (K6), PhelpsODU_45 (K6), Phrank_46 (K6), SirPhilip_45 (K6), Sunflower1121_49 (K6), Unicorn_45 (K6),

Start 31:

- Found in 3 of 118 (2.5%) of genes in pham
- Manual Annotations of this start: 2 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Feyre_41 (K5), Leston_41 (K5), Miryou_44 (K5),

Start 38:

- Found in 111 of 118 (94.1%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 1.8% of time when present
- Phage (with cluster) where this start called: TClif_48 (K6), YoureAdopted_42 (K1),

Summary by clusters:

There are 5 clusters represented in this pham: K5, K2, K1, K6, AG,

Info for manual annotations of cluster AG:

- Start number 27 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 24 was manually annotated 10 times for cluster K1.
- Start number 27 was manually annotated 78 times for cluster K1.
- Start number 28 was manually annotated 2 times for cluster K1.
- Start number 38 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K2:

- Start number 27 was manually annotated 9 times for cluster K2.

Info for manual annotations of cluster K5:

- Start number 31 was manually annotated 2 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 25 was manually annotated 1 time for cluster K6.
- Start number 28 was manually annotated 9 times for cluster K6.

Gene Information:

Gene: ActinUp_43 Start: 34981, Stop: 34601, Start Num: 27

Candidate Starts for ActinUp_43:

(21, 35017), (Start: 27 @34981 has 88 MA's), (29, 34945), (Start: 38 @34885 has 1 MA's), (64, 34675), (73, 34627),

Gene: Adephagia_43 Start: 34978, Stop: 34598, Start Num: 27

Candidate Starts for Adephagia_43:

(21, 35014), (Start: 27 @34978 has 88 MA's), (29, 34942), (Start: 38 @34882 has 1 MA's), (64, 34672), (73, 34624),

Gene: Adonis_43 Start: 35277, Stop: 34897, Start Num: 27

Candidate Starts for Adonis_43:

(19, 35328), (Start: 27 @35277 has 88 MA's), (29, 35241), (37, 35187), (Start: 38 @35181 has 1 MA's), (61, 34986), (64, 34971), (73, 34923),

Gene: Ageofdapage_45 Start: 35950, Stop: 35573, Start Num: 27

Candidate Starts for Ageofdapage_45:

(19, 36001), (Start: 27 @35950 has 88 MA's), (29, 35914), (37, 35860), (Start: 38 @35854 has 1 MA's), (61, 35662), (64, 35647), (73, 35599),

Gene: AlishaPH_43 Start: 35250, Stop: 34873, Start Num: 27

Candidate Starts for AlishaPH_43:

(Start: 27 @35250 has 88 MA's), (29, 35217), (34, 35190), (37, 35163), (Start: 38 @35157 has 1 MA's), (64, 34947), (73, 34899),

Gene: Amelie_38 Start: 34527, Stop: 34129, Start Num: 24

Candidate Starts for Amelie_38:

(20, 34566), (Start: 24 @34527 has 10 MA's), (Start: 38 @34431 has 1 MA's), (65, 34206), (66, 34200),

Gene: Anaya_45 Start: 35589, Stop: 35209, Start Num: 27

Candidate Starts for Anaya_45:

(19, 35640), (Start: 27 @35589 has 88 MA's), (29, 35553), (Start: 38 @35493 has 1 MA's), (61, 35298), (64, 35283), (73, 35235),

Gene: Angelica_43 Start: 35209, Stop: 34829, Start Num: 27

Candidate Starts for Angelica_43:

(19, 35260), (Start: 27 @35209 has 88 MA's), (29, 35173), (Start: 38 @35113 has 1 MA's), (61, 34918), (64, 34903), (73, 34855),

Gene: Apocalypse_46 Start: 35992, Stop: 35615, Start Num: 27

Candidate Starts for Apocalypse_46:

(Start: 27 @35992 has 88 MA's), (34, 35932), (37, 35905), (Start: 38 @35899 has 1 MA's), (40, 35872), (64, 35689), (73, 35641),

Gene: Asayake_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for Asayake_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: Atiba_43 Start: 34941, Stop: 34561, Start Num: 27

Candidate Starts for Atiba_43:

(21, 34977), (Start: 27 @34941 has 88 MA's), (29, 34905), (Start: 38 @34845 has 1 MA's), (64, 34635), (73, 34587),

Gene: BEEST_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for BEEST_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: BGlluviae_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for BGlluviae_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: BaghaKamala_42 Start: 34415, Stop: 34038, Start Num: 27

Candidate Starts for BaghaKamala_42:

(Start: 27 @34415 has 88 MA's), (29, 34382), (34, 34355), (37, 34328), (Start: 38 @34322 has 1 MA's), (64, 34112), (73, 34064),

Gene: BarrelRoll_43 Start: 34964, Stop: 34584, Start Num: 27

Candidate Starts for BarrelRoll_43:

(21, 35000), (Start: 27 @34964 has 88 MA's), (29, 34928), (Start: 38 @34868 has 1 MA's), (64, 34658), (73, 34610),

Gene: Beezoo_45 Start: 35940, Stop: 35563, Start Num: 27

Candidate Starts for Beezoo_45:

(19, 35991), (Start: 27 @35940 has 88 MA's), (29, 35904), (Start: 38 @35844 has 1 MA's), (64, 35637), (73, 35589),

Gene: Bella96_44 Start: 35832, Stop: 35455, Start Num: 27

Candidate Starts for Bella96_44:

(19, 35883), (Start: 27 @35832 has 88 MA's), (29, 35796), (Start: 38 @35736 has 1 MA's), (64, 35529), (73, 35481),

Gene: Belladonna_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Belladonna_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Binglebops_38 Start: 34527, Stop: 34129, Start Num: 24

Candidate Starts for Binglebops_38:

(20, 34566), (Start: 24 @34527 has 10 MA's), (Start: 38 @34431 has 1 MA's), (65, 34206), (66, 34200),

Gene: Blizzard_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for Blizzard_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: Boiiii_43 Start: 35295, Stop: 34915, Start Num: 27

Candidate Starts for Boiiii_43:

(21, 35331), (Start: 27 @35295 has 88 MA's), (29, 35259), (Start: 38 @35199 has 1 MA's), (54, 35040), (64, 34989), (73, 34941),

Gene: BoostSeason_46 Start: 36618, Stop: 36250, Start Num: 27

Candidate Starts for BoostSeason_46:

(Start: 27 @36618 has 88 MA's), (29, 36582), (Start: 38 @36522 has 1 MA's), (43, 36462), (49, 36402), (52, 36372), (55, 36360), (60, 36330), (73, 36276),

Gene: CREW_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for CREW_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Capricorn_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Capricorn_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: CaseJules_44 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for CaseJules_44:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: CheetoDust_42 Start: 34466, Stop: 34089, Start Num: 27

Candidate Starts for CheetoDust_42:

(22, 34490), (Start: 27 @34466 has 88 MA's), (29, 34430), (33, 34415), (Start: 38 @34370 has 1 MA's), (64, 34163), (73, 34115),

Gene: Chris_45 Start: 35677, Stop: 35300, Start Num: 28

Candidate Starts for Chris_45:

(14, 35785), (Start: 28 @35677 has 11 MA's), (29, 35647), (33, 35632), (Start: 38 @35587 has 1 MA's), (39, 35566), (44, 35524), (51, 35449), (65, 35374), (71, 35341), (73, 35326),

Gene: CrimD_43 Start: 35221, Stop: 34844, Start Num: 27

Candidate Starts for CrimD_43:

(19, 35272), (Start: 27 @35221 has 88 MA's), (29, 35185), (33, 35170), (Start: 38 @35125 has 1 MA's), (64, 34918), (73, 34870),

Gene: Curiosium_46 Start: 34128, Stop: 33742, Start Num: 27

Candidate Starts for Curiosium_46:

(7, 34254), (9, 34245), (16, 34209), (17, 34203), (18, 34188), (Start: 27 @34128 has 88 MA's), (Start: 38 @34035 has 1 MA's), (40, 34008), (62, 33837), (73, 33768),

Gene: Dalmuri_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Dalmuri_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: DarthP_45 Start: 35904, Stop: 35545, Start Num: 28

Candidate Starts for DarthP_45:

(Start: 28 @35904 has 11 MA's), (29, 35874), (Start: 38 @35814 has 1 MA's), (41, 35772),

Gene: Deby_43 Start: 35225, Stop: 34845, Start Num: 27

Candidate Starts for Deby_43:

(19, 35276), (Start: 27 @35225 has 88 MA's), (29, 35189), (Start: 38 @35129 has 1 MA's), (61, 34934), (64, 34919), (73, 34871),

Gene: Devera_47 Start: 35759, Stop: 35382, Start Num: 27

Candidate Starts for Devera_47:

(Start: 27 @35759 has 88 MA's), (29, 35723), (Start: 38 @35663 has 1 MA's), (54, 35504), (64, 35456), (73, 35408),

Gene: DismalFunk_46 Start: 37051, Stop: 36680, Start Num: 27

Candidate Starts for DismalFunk_46:

(19, 37105), (Start: 27 @37051 has 88 MA's), (29, 37015), (33, 37000), (Start: 38 @36955 has 1 MA's), (43, 36895), (49, 36835), (52, 36805), (55, 36793), (60, 36763), (73, 36706),

Gene: DismalStressor_46 Start: 37051, Stop: 36680, Start Num: 27

Candidate Starts for DismalStressor_46:

(19, 37105), (Start: 27 @37051 has 88 MA's), (29, 37015), (33, 37000), (Start: 38 @36955 has 1 MA's), (43, 36895), (49, 36835), (52, 36805), (55, 36793), (60, 36763), (73, 36706),

Gene: Dole_46 Start: 35761, Stop: 35384, Start Num: 27

Candidate Starts for Dole_46:

(Start: 27 @35761 has 88 MA's), (29, 35725), (Start: 38 @35665 has 1 MA's), (54, 35506), (64, 35458), (73, 35410),

Gene: DrHayes_44 Start: 35877, Stop: 35500, Start Num: 27

Candidate Starts for DrHayes_44:

(19, 35928), (Start: 27 @35877 has 88 MA's), (29, 35841), (Start: 38 @35781 has 1 MA's), (64, 35574), (73, 35526),

Gene: Durfee_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for Durfee_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: Efra2_46 Start: 35018, Stop: 34629, Start Num: 27

Candidate Starts for Efra2_46:

(8, 35156), (10, 35150), (11, 35147), (13, 35138), (15, 35123), (Start: 27 @35018 has 88 MA's), (Start: 28 @35012 has 11 MA's), (Start: 38 @34922 has 1 MA's), (44, 34859), (48, 34820), (51, 34784), (60, 34724), (62, 34718), (76, 34634),

Gene: Ellie_41 Start: 35161, Stop: 34769, Start Num: 28

Candidate Starts for Ellie_41:

(12, 35278), (Start: 28 @35161 has 11 MA's), (29, 35131), (Start: 38 @35071 has 1 MA's), (39, 35050), (40, 35044), (44, 35008), (45, 34990), (51, 34933), (63, 34861), (73, 34795), (76, 34774),

Gene: Emerson_44 Start: 34972, Stop: 34592, Start Num: 27

Candidate Starts for Emerson_44:

(21, 35008), (Start: 27 @34972 has 88 MA's), (29, 34936), (Start: 38 @34876 has 1 MA's), (64, 34666), (73, 34618),

Gene: Enkosi_41 Start: 37140, Stop: 36742, Start Num: 24

Candidate Starts for Enkosi_41:

(20, 37179), (Start: 24 @37140 has 10 MA's), (Start: 38 @37044 has 1 MA's), (65, 36819), (66, 36813),

Gene: Fefferhead_43 Start: 35112, Stop: 34720, Start Num: 28

Candidate Starts for Fefferhead_43:

(12, 35229), (Start: 28 @35112 has 11 MA's), (29, 35082), (Start: 38 @35022 has 1 MA's), (39, 35001), (40, 34995), (44, 34959), (45, 34941), (51, 34884), (63, 34812), (73, 34746), (76, 34725),

Gene: Feyre_41 Start: 34186, Stop: 33836, Start Num: 31

Candidate Starts for Feyre_41:

(Start: 31 @34186 has 2 MA's), (46, 34045), (51, 33994), (61, 33934),

Gene: Findley_46 Start: 37044, Stop: 36673, Start Num: 27

Candidate Starts for Findley_46:

(19, 37098), (Start: 27 @37044 has 88 MA's), (29, 37008), (33, 36993), (Start: 38 @36948 has 1 MA's), (43, 36888), (49, 36828), (52, 36798), (55, 36786), (60, 36756), (73, 36699),

Gene: Ganymede_44 Start: 35413, Stop: 35036, Start Num: 27

Candidate Starts for Ganymede_44:

(19, 35464), (Start: 27 @35413 has 88 MA's), (29, 35377), (Start: 38 @35317 has 1 MA's), (54, 35158), (64, 35110), (73, 35062),

Gene: Geraldini_45 Start: 36027, Stop: 35650, Start Num: 27

Candidate Starts for Geraldini_45:

(Start: 27 @36027 has 88 MA's), (29, 35994), (34, 35967), (37, 35940), (Start: 38 @35934 has 1 MA's), (64, 35724), (73, 35676),

Gene: Guanica15_46 Start: 34969, Stop: 34586, Start Num: 28

Candidate Starts for Guanica15_46:

(8, 35113), (10, 35107), (11, 35104), (13, 35095), (15, 35080), (Start: 27 @34975 has 88 MA's), (Start: 28 @34969 has 11 MA's), (Start: 38 @34879 has 1 MA's), (44, 34816), (48, 34777), (51, 34741), (60, 34681), (62, 34675), (76, 34591),

Gene: Hammy_45 Start: 35892, Stop: 35533, Start Num: 28

Candidate Starts for Hammy_45:

(Start: 28 @35892 has 11 MA's), (Start: 38 @35802 has 1 MA's), (41, 35760),

Gene: HedwigODU_43 Start: 34981, Stop: 34601, Start Num: 27

Candidate Starts for HedwigODU_43:

(21, 35017), (Start: 27 @34981 has 88 MA's), (29, 34945), (Start: 38 @34885 has 1 MA's), (64, 34675), (73, 34627),

Gene: Homura_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Homura_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Hyperbowlee_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for Hyperbowlee_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: Illumine_46 Start: 35761, Stop: 35384, Start Num: 27

Candidate Starts for Illumine_46:

(Start: 27 @35761 has 88 MA's), (29, 35725), (Start: 38 @35665 has 1 MA's), (54, 35506), (64, 35458), (73, 35410),

Gene: Inky_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Inky_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: JAWS_43 Start: 34970, Stop: 34590, Start Num: 27

Candidate Starts for JAWS_43:

(21, 35006), (Start: 27 @34970 has 88 MA's), (29, 34934), (Start: 38 @34874 has 1 MA's), (54, 34715), (64, 34664), (73, 34616),

Gene: Jarvi_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Jarvi_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Jayhawk_44 Start: 34979, Stop: 34599, Start Num: 27

Candidate Starts for Jayhawk_44:

(21, 35015), (Start: 27 @34979 has 88 MA's), (29, 34943), (Start: 38 @34883 has 1 MA's), (64, 34673), (73, 34625),

Gene: Jeckyll_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Jeckyll_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Joy99_43 Start: 35025, Stop: 34645, Start Num: 27

Candidate Starts for Joy99_43:

(21, 35061), (Start: 27 @35025 has 88 MA's), (29, 34989), (Start: 38 @34929 has 1 MA's), (54, 34770), (64, 34719), (73, 34671),

Gene: LastHope_46 Start: 34433, Stop: 34047, Start Num: 27

Candidate Starts for LastHope_46:

(16, 34514), (17, 34508), (18, 34493), (Start: 27 @34433 has 88 MA's), (Start: 38 @34340 has 1 MA's), (40, 34313), (62, 34142), (73, 34073),

Gene: LaterM_44 Start: 35874, Stop: 35497, Start Num: 27

Candidate Starts for LaterM_44:

(19, 35925), (Start: 27 @35874 has 88 MA's), (29, 35838), (37, 35784), (Start: 38 @35778 has 1 MA's), (61, 35586), (64, 35571), (73, 35523),

Gene: Leston_41 Start: 34396, Stop: 34046, Start Num: 31

Candidate Starts for Leston_41:

(26, 34447), (Start: 31 @34396 has 2 MA's), (46, 34255), (51, 34204), (61, 34144),

Gene: LindNT_43 Start: 35164, Stop: 34787, Start Num: 27

Candidate Starts for LindNT_43:

(19, 35215), (Start: 27 @35164 has 88 MA's), (29, 35128), (33, 35113), (Start: 38 @35068 has 1 MA's), (64, 34861), (73, 34813),

Gene: Llorens_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Llorens_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Lunahalos_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Lunahalos_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: Marcoliusprime_46 Start: 37051, Stop: 36680, Start Num: 27

Candidate Starts for Marcoliusprime_46:

(19, 37105), (Start: 27 @37051 has 88 MA's), (29, 37015), (33, 37000), (Start: 38 @36955 has 1 MA's), (43, 36895), (49, 36835), (52, 36805), (55, 36793), (60, 36763), (73, 36706),

Gene: Marshawn_46 Start: 35965, Stop: 35570, Start Num: 25

Candidate Starts for Marshawn_46:

(Start: 25 @35965 has 1 MA's), (32, 35914), (Start: 38 @35866 has 1 MA's), (42, 35821), (44, 35803), (51, 35728), (61, 35665), (73, 35599), (76, 35578),

Gene: Mdavu_39 Start: 34516, Stop: 34118, Start Num: 24

Candidate Starts for Mdavu_39:

(20, 34555), (Start: 24 @34516 has 10 MA's), (Start: 38 @34420 has 1 MA's), (65, 34195), (66, 34189),

Gene: MeaningOfLife_44 Start: 35907, Stop: 35530, Start Num: 27

Candidate Starts for MeaningOfLife_44:

(19, 35958), (Start: 27 @35907 has 88 MA's), (29, 35871), (Start: 38 @35811 has 1 MA's), (54, 35652), (64, 35604), (73, 35556),

Gene: Megsy_44 Start: 35223, Stop: 34846, Start Num: 27

Candidate Starts for Megsy_44:

(19, 35274), (Start: 27 @35223 has 88 MA's), (29, 35187), (33, 35172), (Start: 38 @35127 has 1 MA's), (64, 34920), (73, 34872),

Gene: Milly_46 Start: 37024, Stop: 36653, Start Num: 27

Candidate Starts for Milly_46:

(19, 37078), (Start: 27 @37024 has 88 MA's), (29, 36988), (33, 36973), (Start: 38 @36928 has 1 MA's), (43, 36868), (49, 36808), (52, 36778), (55, 36766), (60, 36736), (73, 36679),

Gene: Miryou_44 Start: 36599, Stop: 36249, Start Num: 31

Candidate Starts for Miryou_44:

(26, 36650), (Start: 31 @36599 has 2 MA's), (46, 36458), (51, 36407), (61, 36347),

Gene: Mufasa_46 Start: 36609, Stop: 36241, Start Num: 27

Candidate Starts for Mufasa_46:

(Start: 27 @36609 has 88 MA's), (29, 36573), (Start: 38 @36513 has 1 MA's), (43, 36453), (49, 36393), (52, 36363), (55, 36351), (60, 36321), (73, 36267),

Gene: Murucutumbu_44 Start: 35967, Stop: 35590, Start Num: 27

Candidate Starts for Murucutumbu_44:

(19, 36018), (Start: 27 @35967 has 88 MA's), (29, 35931), (37, 35877), (Start: 38 @35871 has 1 MA's), (61, 35679), (64, 35664), (73, 35616),

Gene: Mynx_44 Start: 35298, Stop: 34921, Start Num: 27

Candidate Starts for Mynx_44:

(19, 35349), (Start: 27 @35298 has 88 MA's), (29, 35262), (33, 35247), (Start: 38 @35202 has 1 MA's), (64, 34995), (73, 34947),

Gene: Nergal_40 Start: 33595, Stop: 33221, Start Num: 27

Candidate Starts for Nergal_40:

(22, 33622), (Start: 27 @33595 has 88 MA's), (29, 33559), (34, 33532), (Start: 38 @33499 has 1 MA's), (44, 33436), (50, 33376), (54, 33340), (73, 33247), (76, 33226),

Gene: Nikao_41 Start: 37140, Stop: 36742, Start Num: 24

Candidate Starts for Nikao_41:

(20, 37179), (Start: 24 @37140 has 10 MA's), (Start: 38 @37044 has 1 MA's), (65, 36819), (66, 36813),

Gene: Niklas_45 Start: 35707, Stop: 35315, Start Num: 24

Candidate Starts for Niklas_45:

(Start: 24 @35707 has 10 MA's), (36, 35623), (Start: 38 @35608 has 1 MA's), (55, 35446), (66, 35383), (70, 35359), (75, 35326),

Gene: Nutello_38 Start: 34527, Stop: 34129, Start Num: 24

Candidate Starts for Nutello_38:

(20, 34566), (Start: 24 @34527 has 10 MA's), (Start: 38 @34431 has 1 MA's), (65, 34206), (66, 34200),

Gene: Padfoot_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for Padfoot_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: Padpat_44 Start: 34972, Stop: 34592, Start Num: 27

Candidate Starts for Padpat_44:

(21, 35008), (Start: 27 @34972 has 88 MA's), (29, 34936), (Start: 38 @34876 has 1 MA's), (64, 34666), (73, 34618),

Gene: Peel_43 Start: 35098, Stop: 34718, Start Num: 27

Candidate Starts for Peel_43:

(21, 35134), (Start: 27 @35098 has 88 MA's), (29, 35062), (Start: 38 @35002 has 1 MA's), (54, 34843), (64, 34792), (73, 34744),

Gene: PhelpsODU_45 Start: 34877, Stop: 34485, Start Num: 28

Candidate Starts for PhelpsODU_45:

(1, 35147), (2, 35111), (3, 35096), (5, 35087), (6, 35078), (Start: 28 @34877 has 11 MA's), (29, 34847), (44, 34724), (50, 34664), (51, 34649), (67, 34550), (73, 34511),

Gene: Phrank_46 Start: 34834, Stop: 34442, Start Num: 28

Candidate Starts for Phrank_46:

(4, 35047), (6, 35035), (Start: 28 @34834 has 11 MA's), (29, 34804), (44, 34681), (47, 34648), (50, 34621), (51, 34606), (56, 34570), (68, 34498), (73, 34468),

Gene: Piatt_43 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for Piatt_43:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: Pokerus_42 Start: 35018, Stop: 34638, Start Num: 27

Candidate Starts for Pokerus_42:

(Start: 27 @35018 has 88 MA's), (29, 34985), (34, 34958), (37, 34931), (Start: 38 @34925 has 1 MA's), (64, 34712), (73, 34664),

Gene: Prithvi_44 Start: 35164, Stop: 34787, Start Num: 27

Candidate Starts for Prithvi_44:

(19, 35215), (Start: 27 @35164 has 88 MA's), (29, 35128), (33, 35113), (Start: 38 @35068 has 1 MA's), (64, 34861), (73, 34813),

Gene: QuincyRose_42 Start: 35413, Stop: 35036, Start Num: 27

Candidate Starts for QuincyRose_42:

(19, 35464), (Start: 27 @35413 has 88 MA's), (29, 35377), (Start: 38 @35317 has 1 MA's), (54, 35158), (64, 35110), (73, 35062),

Gene: Ramen_43 Start: 34983, Stop: 34603, Start Num: 27

Candidate Starts for Ramen_43:

(21, 35019), (Start: 27 @34983 has 88 MA's), (29, 34947), (Start: 38 @34887 has 1 MA's), (64, 34677), (73, 34629),

Gene: Rapunzel97_43 Start: 34979, Stop: 34599, Start Num: 27

Candidate Starts for Rapunzel97_43:

(21, 35015), (Start: 27 @34979 has 88 MA's), (29, 34943), (Start: 38 @34883 has 1 MA's), (64, 34673), (73, 34625),

Gene: Rosmarinus_43 Start: 35084, Stop: 34704, Start Num: 27

Candidate Starts for Rosmarinus_43:

(21, 35120), (Start: 27 @35084 has 88 MA's), (29, 35048), (Start: 38 @34988 has 1 MA's), (54, 34829), (64, 34778), (73, 34730),

Gene: SamuelLPlaqson_44 Start: 35877, Stop: 35500, Start Num: 27

Candidate Starts for SamuelLPlaqson_44:

(19, 35928), (Start: 27 @35877 has 88 MA's), (29, 35841), (Start: 38 @35781 has 1 MA's), (64, 35574), (73, 35526),

Gene: SgtBeansprout_38 Start: 34527, Stop: 34063, Start Num: 24

Candidate Starts for SgtBeansprout_38:

(20, 34566), (Start: 24 @34527 has 10 MA's), (Start: 38 @34431 has 1 MA's), (65, 34206), (66, 34200),

Gene: Shaobing_45 Start: 35682, Stop: 35284, Start Num: 24

Candidate Starts for Shaobing_45:

(Start: 24 @35682 has 10 MA's), (Start: 38 @35583 has 1 MA's), (51, 35445), (61, 35379), (66, 35352), (70, 35328), (75, 35295),

Gene: ShiaSurprise_44 Start: 35293, Stop: 34913, Start Num: 27

Candidate Starts for ShiaSurprise_44:

(21, 35329), (Start: 27 @35293 has 88 MA's), (29, 35257), (Start: 38 @35197 has 1 MA's), (54, 35038), (64, 34987), (73, 34939),

Gene: SirPhilip_45 Start: 36219, Stop: 35824, Start Num: 28

Candidate Starts for SirPhilip_45:

(Start: 28 @36219 has 11 MA's), (29, 36189), (Start: 38 @36129 has 1 MA's), (40, 36102), (44, 36066), (53, 35973), (58, 35943), (73, 35850),

Gene: Slimphazie_43 Start: 34979, Stop: 34599, Start Num: 27

Candidate Starts for Slimphazie_43:

(21, 35015), (Start: 27 @34979 has 88 MA's), (29, 34943), (Start: 38 @34883 has 1 MA's), (64, 34673), (73, 34625),

Gene: Spock_43 Start: 35097, Stop: 34717, Start Num: 27

Candidate Starts for Spock_43:

(21, 35133), (Start: 27 @35097 has 88 MA's), (29, 35061), (Start: 38 @35001 has 1 MA's), (54, 34842), (64, 34791), (73, 34743),

Gene: Stinson_44 Start: 35487, Stop: 35110, Start Num: 27

Candidate Starts for Stinson_44:

(19, 35538), (Start: 27 @35487 has 88 MA's), (29, 35451), (37, 35397), (Start: 38 @35391 has 1 MA's), (61, 35199), (64, 35184), (73, 35136),

Gene: Strobilo_46 Start: 37026, Stop: 36655, Start Num: 27

Candidate Starts for Strobilo_46:

(19, 37080), (Start: 27 @37026 has 88 MA's), (29, 36990), (33, 36975), (Start: 38 @36930 has 1 MA's), (43, 36870), (49, 36810), (52, 36780), (55, 36768), (60, 36738), (73, 36681),

Gene: Sulley_43 Start: 35224, Stop: 34844, Start Num: 27

Candidate Starts for Sulley_43:

(19, 35275), (Start: 27 @35224 has 88 MA's), (29, 35188), (Start: 38 @35128 has 1 MA's), (61, 34933), (64, 34918), (73, 34870),

Gene: Sunflower1121_49 Start: 36097, Stop: 35708, Start Num: 28

Candidate Starts for Sunflower1121_49:

(Start: 28 @36097 has 11 MA's), (29, 36067), (41, 35965), (44, 35944), (50, 35884), (51, 35869), (56, 35833), (72, 35740),

Gene: TClif_48 Start: 35997, Stop: 35698, Start Num: 38

Candidate Starts for TClif_48:

(23, 36099), (30, 36051), (35, 36015), (37, 36003), (Start: 38 @35997 has 1 MA's), (51, 35859), (59, 35814), (61, 35796), (65, 35775), (67, 35763), (74, 35715), (77, 35703),

Gene: Tachez_43 Start: 34941, Stop: 34561, Start Num: 27

Candidate Starts for Tachez_43:

(21, 34977), (Start: 27 @34941 has 88 MA's), (29, 34905), (Start: 38 @34845 has 1 MA's), (64, 34635), (73, 34587),

Gene: TaiwanKao_45 Start: 35220, Stop: 34843, Start Num: 27

Candidate Starts for TaiwanKao_45:

(19, 35271), (Start: 27 @35220 has 88 MA's), (29, 35184), (33, 35169), (Start: 38 @35124 has 1 MA's), (64, 34917), (73, 34869),

Gene: TiniBug_44 Start: 35873, Stop: 35496, Start Num: 27

Candidate Starts for TiniBug_44:

(19, 35924), (Start: 27 @35873 has 88 MA's), (29, 35837), (Start: 38 @35777 has 1 MA's), (64, 35570), (73, 35522),

Gene: Topper_43 Start: 35096, Stop: 34716, Start Num: 27

Candidate Starts for Topper_43:

(21, 35132), (Start: 27 @35096 has 88 MA's), (29, 35060), (Start: 38 @35000 has 1 MA's), (54, 34841), (64, 34790), (73, 34742),

Gene: TreyKay_44 Start: 35164, Stop: 34787, Start Num: 27

Candidate Starts for TreyKay_44:

(19, 35215), (Start: 27 @35164 has 88 MA's), (29, 35128), (33, 35113), (Start: 38 @35068 has 1 MA's), (64, 34861), (73, 34813),

Gene: TruffulaTree_43 Start: 34975, Stop: 34595, Start Num: 27

Candidate Starts for TruffulaTree_43:

(21, 35011), (Start: 27 @34975 has 88 MA's), (29, 34939), (Start: 38 @34879 has 1 MA's), (64, 34669), (73, 34621),

Gene: Twitch_43 Start: 35098, Stop: 34718, Start Num: 27

Candidate Starts for Twitch_43:

(21, 35134), (Start: 27 @35098 has 88 MA's), (29, 35062), (Start: 38 @35002 has 1 MA's), (54, 34843), (64, 34792), (73, 34744),

Gene: Unicorn_45 Start: 34877, Stop: 34485, Start Num: 28

Candidate Starts for Unicorn_45:

(1, 35147), (2, 35111), (3, 35096), (5, 35087), (6, 35078), (Start: 28 @34877 has 11 MA's), (29, 34847), (44, 34724), (50, 34664), (51, 34649), (67, 34550), (73, 34511),

Gene: Urkel_44 Start: 35877, Stop: 35500, Start Num: 27

Candidate Starts for Urkel_44:

(19, 35928), (Start: 27 @35877 has 88 MA's), (29, 35841), (Start: 38 @35781 has 1 MA's), (64, 35574), (73, 35526),

Gene: Validus_47 Start: 35733, Stop: 35320, Start Num: 24

Candidate Starts for Validus_47:

(16, 35814), (Start: 24 @35733 has 10 MA's), (36, 35637), (Start: 38 @35622 has 1 MA's), (51, 35484), (61, 35421), (66, 35394), (69, 35376), (77, 35325),

Gene: Veliki_43 Start: 35015, Stop: 34635, Start Num: 27

Candidate Starts for Veliki_43:

(21, 35051), (Start: 27 @35015 has 88 MA's), (29, 34979), (Start: 38 @34919 has 1 MA's), (64, 34709), (73, 34661),

Gene: YoureAdopted_42 Start: 35085, Stop: 34804, Start Num: 38

Candidate Starts for YoureAdopted_42:

(Start: 38 @35085 has 1 MA's), (64, 34878), (73, 34830),

Gene: Yunkel11_46 Start: 34974, Stop: 34585, Start Num: 27

Candidate Starts for Yunkel11_46:

(8, 35112), (10, 35106), (11, 35103), (13, 35094), (15, 35079), (Start: 27 @34974 has 88 MA's), (Start: 28 @34968 has 11 MA's), (Start: 38 @34878 has 1 MA's), (44, 34815), (48, 34776), (51, 34740), (60, 34680), (62, 34674), (76, 34590),

Gene: Zavala_44 Start: 35258, Stop: 34881, Start Num: 27

Candidate Starts for Zavala_44:

(19, 35309), (Start: 27 @35258 has 88 MA's), (29, 35222), (33, 35207), (Start: 38 @35162 has 1 MA's), (64, 34955), (73, 34907),

Gene: ZoeJ_45 Start: 36489, Stop: 36121, Start Num: 27

Candidate Starts for ZoeJ_45:

(19, 36546), (Start: 27 @36489 has 88 MA's), (29, 36453), (32, 36441), (Start: 38 @36393 has 1 MA's), (44, 36330), (49, 36273), (57, 36213), (60, 36201), (73, 36147),