



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 304982 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304982 has 72 members, 7 are drafts.

Phages represented in each track:

- Track 1 : ReMo\_96, Looper\_95, LastResort\_96, Anaysia\_98, Switzerland\_96, Epsocamisio\_96, JSwag\_99, Boohoo\_97, Nebulosus\_95, ShayRa\_96
- Track 2 : Fowlmouth\_48, MrMiyagi\_47
- Track 3 : Aphelion\_172, WilliamBoone\_179, Smoothie\_175, ClubL\_174, Cucurbita\_173, Bachita\_176, Toniann\_174, PhinkBoden\_171, Lozinak\_174, Geeche\_178, Norvs\_171
- Track 4 : Culver\_177
- Track 5 : Miskis\_166
- Track 6 : OneUp\_158
- Track 7 : BrutonGaster\_156
- Track 8 : Lilbeanie\_48
- Track 9 : AluminumJesus\_90, Gazebo\_92
- Track 10 : Viceroy\_92, FrankDeliGuy\_91, Rudy\_91, DonaldDuck\_93, Judebell\_93, Hyperion\_92, Zagie\_95, Llemily\_93, Lonelysoil\_91, Mashley\_92, Nike\_91, Kyva\_98, Sillytadpoles\_94, Zhafia\_96, Quammi\_93, SlySloth\_95
- Track 11 : BabyDotz\_91, EverythinBagel\_91, Casend\_94, Rowlf\_90, Blab\_90, Statler\_96
- Track 12 : Fizzles\_91
- Track 13 : Altheas\_96
- Track 14 : Mentos\_97, Wheelie\_93, Namago\_95, StrawberryJamm\_99, SallyK\_95, Wayne3\_95, Teehee\_94, Grassboy\_98, Phabia\_93, Jehoshaphat\_95
- Track 15 : MorillMayhem\_92, BaconCheese\_96, Mila11\_94
- Track 16 : Phinky\_98
- Track 17 : Squash\_95
- Track 18 : Gingerbug\_34
- Track 19 : Wrackline\_46
- Track 20 : Tailonex\_73

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

The start number called the most often in the published annotations is 18, it was called in 36 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Altheas\_96, AluminumJesus\_90, BabyDotz\_91, BaconCheese\_96, Blab\_90, Casend\_94, DonaldDuck\_93, EverythinBagel\_91, Fizzles\_91, FrankDeliGuy\_91, Gazebo\_92, Grassboy\_98, Hyperion\_92, Jehoshaphat\_95, Judebell\_93, Kyva\_98, Llemily\_93, Lonelysoil\_91, Mashley\_92, Mentos\_97, Mila11\_94, MorillMayhem\_92, Namago\_95, Nike\_91, Phabia\_93, Phinky\_98, Quammi\_93, Rowlf\_90, Rudy\_91, SallyK\_95, Sillytadpoles\_94, SlySloth\_95, Squash\_95, Statler\_96, StrawberryJamm\_99, Teehee\_94, Viceroy\_92, Wayne3\_95, Wheelie\_93, Zagie\_95, Zhafia\_96,

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:

- Anaysia\_98, Aphelion\_172, Bachita\_176, Boohoo\_97, BrutonGaster\_156, ClubL\_174, Cucurbita\_173, Culver\_177, Epsocamisio\_96, Fowlmouth\_48, Geeche\_178, Gingerbug\_34, JSwag\_99, LastResort\_96, Lilbeanie\_48, Looper\_95, Lozinak\_174, Miskis\_166, MrMiyagi\_47, Nebulosus\_95, Norvs\_171, OneUp\_158, PhinkBoden\_171, ReMo\_96, ShayRa\_96, Smoothie\_175, Switzerland\_96, Tailonex\_73, Toniann\_174, WilliamBoone\_179, Wrackline\_46,

### Summary by start number:

Start 16:

- Found in 2 of 72 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 2 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gingerbug\_34 (GF), Wrackline\_46 (GF),

Start 17:

- Found in 14 of 72 ( 19.4% ) of genes in pham
- Manual Annotations of this start: 14 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anaysia\_98 (A15), Boohoo\_97 (A15), BrutonGaster\_156 (CQ2), Culver\_177 (CQ1), Epsocamisio\_96 (A15), JSwag\_99 (A15), LastResort\_96 (A15), Looper\_95 (A15), Miskis\_166 (CQ1), Nebulosus\_95 (A15), OneUp\_158 (CQ2), ReMo\_96 (A15), ShayRa\_96 (A15), Switzerland\_96 (A15),

Start 18:

- Found in 41 of 72 ( 56.9% ) of genes in pham
- Manual Annotations of this start: 36 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altheas\_96 (EG), AluminumJesus\_90 (EG), BabyDotz\_91 (EG), BaconCheese\_96 (EG), Blab\_90 (EG), Casend\_94 (EG), DonaldDuck\_93 (EG), EverythinBagel\_91 (EG), Fizzles\_91 (EG), FrankDeliGuy\_91 (EG), Gazebo\_92 (EG), Grassboy\_98 (EG), Hyperion\_92 (EG), Jehoshaphat\_95 (EG), Judebell\_93 (EG), Kyva\_98 (EG), Llemily\_93 (EG), Lonelysoil\_91 (EG), Mashley\_92 (EG), Mentos\_97 (EG), Mila11\_94 (EG), MorillMayhem\_92 (EG), Namago\_95 (EG), Nike\_91 (EG), Phabia\_93 (EG), Phinky\_98 (EG), Quammi\_93 (EG), Rowlf\_90 (EG), Rudy\_91 (EG), SallyK\_95 (EG), Sillytadpoles\_94 (EG), SlySloth\_95 (EG), Squash\_95 (EG), Statler\_96 (EG), StrawberryJamm\_99 (EG), Teehee\_94 (EG), Viceroy\_92 (EG), Wayne3\_95 (EG), Wheelie\_93 (EG), Zagie\_95 (EG), Zhafia\_96 (EG),

Start 19:

- Found in 11 of 72 ( 15.3% ) of genes in pham
- Manual Annotations of this start: 10 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aphelion\_172 (CQ1), Bachita\_176 (CQ1), ClubL\_174 (CQ1), Cucurbita\_173 (CQ1), Geeche\_178 (CQ1), Lozinak\_174 (CQ1), Norvs\_171 (CQ1), PhinkBoden\_171 (CQ1), Smoothie\_175 (CQ1), Toniann\_174 (CQ1), WilliamBoone\_179 (CQ1),

Start 20:

- Found in 2 of 72 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie\_48 (DE5), Tailonex\_73 (singleton),

Start 21:

- Found in 2 of 72 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 2 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fowlmouth\_48 (AC), MrMiyagi\_47 (AC),

**Summary by clusters:**

There are 8 clusters represented in this pham: A15, AC, EG, DE5, singleton, GF, CQ2, CQ1,

Info for manual annotations of cluster A15:

- Start number 17 was manually annotated 10 times for cluster A15.

Info for manual annotations of cluster AC:

- Start number 21 was manually annotated 2 times for cluster AC.

Info for manual annotations of cluster CQ1:

- Start number 17 was manually annotated 2 times for cluster CQ1.
- Start number 19 was manually annotated 10 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 17 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster DE5:

- Start number 20 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster EG:

- Start number 18 was manually annotated 36 times for cluster EG.

Info for manual annotations of cluster GF:

- Start number 16 was manually annotated 2 times for cluster GF.

**Gene Information:**

Gene: Altheas\_96 Start: 58403, Stop: 58167, Start Num: 18  
Candidate Starts for Altheas\_96:  
(15, 58412), (Start: 18 @58403 has 36 MA's), (22, 58370), (25, 58355), (31, 58283),

Gene: AluminumJesus\_90 Start: 56836, Stop: 56606, Start Num: 18  
Candidate Starts for AluminumJesus\_90:  
(Start: 18 @56836 has 36 MA's), (22, 56803), (23, 56794), (25, 56788), (28, 56749),

Gene: Anaysia\_98 Start: 50449, Stop: 50252, Start Num: 17  
Candidate Starts for Anaysia\_98:  
(Start: 17 @50449 has 14 MA's), (33, 50320),

Gene: Aphelion\_172 Start: 87944, Stop: 87729, Start Num: 19  
Candidate Starts for Aphelion\_172:  
(Start: 19 @87944 has 10 MA's),

Gene: BabyDotz\_91 Start: 58703, Stop: 58476, Start Num: 18  
Candidate Starts for BabyDotz\_91:  
(Start: 18 @58703 has 36 MA's), (25, 58655), (34, 58565), (36, 58544),

Gene: Bachita\_176 Start: 88020, Stop: 87805, Start Num: 19  
Candidate Starts for Bachita\_176:  
(Start: 19 @88020 has 10 MA's),

Gene: BaconCheese\_96 Start: 58803, Stop: 58567, Start Num: 18  
Candidate Starts for BaconCheese\_96:  
(Start: 18 @58803 has 36 MA's), (22, 58770), (25, 58755), (29, 58707),

Gene: Blab\_90 Start: 57409, Stop: 57182, Start Num: 18  
Candidate Starts for Blab\_90:  
(Start: 18 @57409 has 36 MA's), (25, 57361), (34, 57271), (36, 57250),

Gene: Boohoo\_97 Start: 49766, Stop: 49569, Start Num: 17  
Candidate Starts for Boohoo\_97:  
(Start: 17 @49766 has 14 MA's), (33, 49637),

Gene: BrutonGaster\_156 Start: 84309, Stop: 84094, Start Num: 17  
Candidate Starts for BrutonGaster\_156:  
(Start: 17 @84309 has 14 MA's),

Gene: Casend\_94 Start: 58038, Stop: 57811, Start Num: 18  
Candidate Starts for Casend\_94:  
(Start: 18 @58038 has 36 MA's), (25, 57990), (34, 57900), (36, 57879),

Gene: ClubL\_174 Start: 87265, Stop: 87050, Start Num: 19  
Candidate Starts for ClubL\_174:  
(Start: 19 @87265 has 10 MA's),

Gene: Cucurbita\_173 Start: 88326, Stop: 88111, Start Num: 19  
Candidate Starts for Cucurbita\_173:  
(Start: 19 @88326 has 10 MA's),

Gene: Culver\_177 Start: 86978, Stop: 86781, Start Num: 17

Candidate Starts for Culver\_177:  
(13, 87017), (Start: 17 @86978 has 14 MA's), (38, 86795),

Gene: DonaldDuck\_93 Start: 57438, Stop: 57211, Start Num: 18  
Candidate Starts for DonaldDuck\_93:  
(Start: 18 @57438 has 36 MA's), (25, 57390), (34, 57300),

Gene: Epsocamisio\_96 Start: 50125, Stop: 49928, Start Num: 17  
Candidate Starts for Epsocamisio\_96:  
(Start: 17 @50125 has 14 MA's), (33, 49996),

Gene: EverythinBagel\_91 Start: 57233, Stop: 57006, Start Num: 18  
Candidate Starts for EverythinBagel\_91:  
(Start: 18 @57233 has 36 MA's), (25, 57185), (34, 57095), (36, 57074),

Gene: Fizzles\_91 Start: 57426, Stop: 57196, Start Num: 18  
Candidate Starts for Fizzles\_91:  
(11, 57501), (Start: 18 @57426 has 36 MA's), (22, 57393), (25, 57378), (28, 57339),

Gene: Fowlmouth\_48 Start: 36213, Stop: 36398, Start Num: 21  
Candidate Starts for Fowlmouth\_48:  
(Start: 21 @36213 has 2 MA's), (30, 36294), (31, 36306), (38, 36381),

Gene: FrankDeliGuy\_91 Start: 57716, Stop: 57489, Start Num: 18  
Candidate Starts for FrankDeliGuy\_91:  
(Start: 18 @57716 has 36 MA's), (25, 57668), (34, 57578),

Gene: Gazebo\_92 Start: 57414, Stop: 57184, Start Num: 18  
Candidate Starts for Gazebo\_92:  
(Start: 18 @57414 has 36 MA's), (22, 57381), (23, 57372), (25, 57366), (28, 57327),

Gene: Geeche\_178 Start: 88689, Stop: 88474, Start Num: 19  
Candidate Starts for Geeche\_178:  
(Start: 19 @88689 has 10 MA's),

Gene: Gingerbug\_34 Start: 23484, Stop: 23242, Start Num: 16  
Candidate Starts for Gingerbug\_34:  
(7, 23565), (10, 23550), (11, 23544), (Start: 16 @23484 has 2 MA's), (27, 23394),

Gene: Grassboy\_98 Start: 58339, Stop: 58112, Start Num: 18  
Candidate Starts for Grassboy\_98:  
(Start: 18 @58339 has 36 MA's), (23, 58297), (25, 58291), (34, 58201),

Gene: Hyperion\_92 Start: 57476, Stop: 57249, Start Num: 18  
Candidate Starts for Hyperion\_92:  
(Start: 18 @57476 has 36 MA's), (25, 57428), (34, 57338),

Gene: JSwag\_99 Start: 49973, Stop: 49776, Start Num: 17  
Candidate Starts for JSwag\_99:  
(Start: 17 @49973 has 14 MA's), (33, 49844),

Gene: Jehoshaphat\_95 Start: 58072, Stop: 57845, Start Num: 18  
Candidate Starts for Jehoshaphat\_95:

(Start: 18 @58072 has 36 MA's), (23, 58030), (25, 58024), (34, 57934),

Gene: Judebell\_93 Start: 57470, Stop: 57243, Start Num: 18

Candidate Starts for Judebell\_93:

(Start: 18 @57470 has 36 MA's), (25, 57422), (34, 57332),

Gene: Kyva\_98 Start: 58363, Stop: 58136, Start Num: 18

Candidate Starts for Kyva\_98:

(Start: 18 @58363 has 36 MA's), (25, 58315), (34, 58225),

Gene: LastResort\_96 Start: 50207, Stop: 50010, Start Num: 17

Candidate Starts for LastResort\_96:

(Start: 17 @50207 has 14 MA's), (33, 50078),

Gene: Lilbeanie\_48 Start: 36836, Stop: 37033, Start Num: 20

Candidate Starts for Lilbeanie\_48:

(Start: 20 @36836 has 1 MA's), (24, 36872),

Gene: Llemily\_93 Start: 57133, Stop: 56906, Start Num: 18

Candidate Starts for Llemily\_93:

(Start: 18 @57133 has 36 MA's), (25, 57085), (34, 56995),

Gene: Lonelysoil\_91 Start: 56893, Stop: 56666, Start Num: 18

Candidate Starts for Lonelysoil\_91:

(Start: 18 @56893 has 36 MA's), (25, 56845), (34, 56755),

Gene: Looper\_95 Start: 49056, Stop: 48859, Start Num: 17

Candidate Starts for Looper\_95:

(Start: 17 @49056 has 14 MA's), (33, 48927),

Gene: Lozinak\_174 Start: 87869, Stop: 87654, Start Num: 19

Candidate Starts for Lozinak\_174:

(Start: 19 @87869 has 10 MA's),

Gene: Mashley\_92 Start: 57565, Stop: 57338, Start Num: 18

Candidate Starts for Mashley\_92:

(Start: 18 @57565 has 36 MA's), (25, 57517), (34, 57427),

Gene: Mentos\_97 Start: 58524, Stop: 58297, Start Num: 18

Candidate Starts for Mentos\_97:

(Start: 18 @58524 has 36 MA's), (23, 58482), (25, 58476), (34, 58386),

Gene: Mila11\_94 Start: 58854, Stop: 58618, Start Num: 18

Candidate Starts for Mila11\_94:

(Start: 18 @58854 has 36 MA's), (22, 58821), (25, 58806), (29, 58758),

Gene: Miskis\_166 Start: 86835, Stop: 86647, Start Num: 17

Candidate Starts for Miskis\_166:

(2, 87228), (5, 87000), (13, 86868), (Start: 17 @86835 has 14 MA's),

Gene: MorillMayhem\_92 Start: 57693, Stop: 57457, Start Num: 18

Candidate Starts for MorillMayhem\_92:

(Start: 18 @57693 has 36 MA's), (22, 57660), (25, 57645), (29, 57597),

Gene: MrMiyagi\_47 Start: 36597, Stop: 36782, Start Num: 21  
Candidate Starts for MrMiyagi\_47:  
(Start: 21 @36597 has 2 MA's), (30, 36678), (31, 36690), (38, 36765),

Gene: Namago\_95 Start: 57620, Stop: 57393, Start Num: 18  
Candidate Starts for Namago\_95:  
(Start: 18 @57620 has 36 MA's), (23, 57578), (25, 57572), (34, 57482),

Gene: Nebulosus\_95 Start: 49764, Stop: 49567, Start Num: 17  
Candidate Starts for Nebulosus\_95:  
(Start: 17 @49764 has 14 MA's), (33, 49635),

Gene: Nike\_91 Start: 57838, Stop: 57611, Start Num: 18  
Candidate Starts for Nike\_91:  
(Start: 18 @57838 has 36 MA's), (25, 57790), (34, 57700),

Gene: Norvs\_171 Start: 87045, Stop: 86830, Start Num: 19  
Candidate Starts for Norvs\_171:  
(Start: 19 @87045 has 10 MA's),

Gene: OneUp\_158 Start: 86856, Stop: 86638, Start Num: 17  
Candidate Starts for OneUp\_158:  
(Start: 17 @86856 has 14 MA's), (32, 86712),

Gene: Phabia\_93 Start: 57470, Stop: 57243, Start Num: 18  
Candidate Starts for Phabia\_93:  
(Start: 18 @57470 has 36 MA's), (23, 57428), (25, 57422), (34, 57332),

Gene: PhinkBoden\_171 Start: 87443, Stop: 87228, Start Num: 19  
Candidate Starts for PhinkBoden\_171:  
(Start: 19 @87443 has 10 MA's),

Gene: Phinky\_98 Start: 59193, Stop: 58963, Start Num: 18  
Candidate Starts for Phinky\_98:  
(6, 59322), (9, 59274), (12, 59253), (Start: 18 @59193 has 36 MA's), (25, 59145), (31, 59073), (38, 59001),

Gene: Quammi\_93 Start: 57415, Stop: 57188, Start Num: 18  
Candidate Starts for Quammi\_93:  
(Start: 18 @57415 has 36 MA's), (25, 57367), (34, 57277),

Gene: ReMo\_96 Start: 50190, Stop: 49993, Start Num: 17  
Candidate Starts for ReMo\_96:  
(Start: 17 @50190 has 14 MA's), (33, 50061),

Gene: Rowlf\_90 Start: 57283, Stop: 57056, Start Num: 18  
Candidate Starts for Rowlf\_90:  
(Start: 18 @57283 has 36 MA's), (25, 57235), (34, 57145), (36, 57124),

Gene: Rudy\_91 Start: 57281, Stop: 57054, Start Num: 18  
Candidate Starts for Rudy\_91:  
(Start: 18 @57281 has 36 MA's), (25, 57233), (34, 57143),

Gene: SallyK\_95 Start: 58436, Stop: 58209, Start Num: 18  
Candidate Starts for SallyK\_95:  
(Start: 18 @58436 has 36 MA's), (23, 58394), (25, 58388), (34, 58298),

Gene: ShayRa\_96 Start: 48822, Stop: 48625, Start Num: 17  
Candidate Starts for ShayRa\_96:  
(Start: 17 @48822 has 14 MA's), (33, 48693),

Gene: Sillytadpoles\_94 Start: 57121, Stop: 56894, Start Num: 18  
Candidate Starts for Sillytadpoles\_94:  
(Start: 18 @57121 has 36 MA's), (25, 57073), (34, 56983),

Gene: SlySloth\_95 Start: 57237, Stop: 57010, Start Num: 18  
Candidate Starts for SlySloth\_95:  
(Start: 18 @57237 has 36 MA's), (25, 57189), (34, 57099),

Gene: Smoothie\_175 Start: 87741, Stop: 87526, Start Num: 19  
Candidate Starts for Smoothie\_175:  
(Start: 19 @87741 has 10 MA's),

Gene: Squash\_95 Start: 57828, Stop: 57601, Start Num: 18  
Candidate Starts for Squash\_95:  
(1, 58293), (3, 58173), (4, 58152), (14, 57867), (Start: 18 @57828 has 36 MA's), (25, 57780),

Gene: Statler\_96 Start: 57852, Stop: 57625, Start Num: 18  
Candidate Starts for Statler\_96:  
(Start: 18 @57852 has 36 MA's), (25, 57804), (34, 57714), (36, 57693),

Gene: StrawberryJamm\_99 Start: 57390, Stop: 57163, Start Num: 18  
Candidate Starts for StrawberryJamm\_99:  
(Start: 18 @57390 has 36 MA's), (23, 57348), (25, 57342), (34, 57252),

Gene: Switzerland\_96 Start: 49791, Stop: 49594, Start Num: 17  
Candidate Starts for Switzerland\_96:  
(Start: 17 @49791 has 14 MA's), (33, 49662),

Gene: Tailonex\_73 Start: 46544, Stop: 46347, Start Num: 20  
Candidate Starts for Tailonex\_73:  
(Start: 20 @46544 has 1 MA's), (35, 46412), (40, 46355),

Gene: Teehee\_94 Start: 58069, Stop: 57842, Start Num: 18  
Candidate Starts for Teehee\_94:  
(Start: 18 @58069 has 36 MA's), (23, 58027), (25, 58021), (34, 57931),

Gene: Toniann\_174 Start: 87186, Stop: 86971, Start Num: 19  
Candidate Starts for Toniann\_174:  
(Start: 19 @87186 has 10 MA's),

Gene: Viceroy\_92 Start: 57236, Stop: 57009, Start Num: 18  
Candidate Starts for Viceroy\_92:  
(Start: 18 @57236 has 36 MA's), (25, 57188), (34, 57098),

Gene: Wayne3\_95 Start: 58039, Stop: 57812, Start Num: 18  
Candidate Starts for Wayne3\_95:  
(Start: 18 @58039 has 36 MA's), (23, 57997), (25, 57991), (34, 57901),

Gene: Wheelie\_93 Start: 57360, Stop: 57133, Start Num: 18  
Candidate Starts for Wheelie\_93:  
(Start: 18 @57360 has 36 MA's), (23, 57318), (25, 57312), (34, 57222),

Gene: WilliamBoone\_179 Start: 86680, Stop: 86468, Start Num: 19  
Candidate Starts for WilliamBoone\_179:  
(Start: 19 @86680 has 10 MA's),

Gene: Wrackline\_46 Start: 25700, Stop: 25458, Start Num: 16  
Candidate Starts for Wrackline\_46:  
(8, 25787), (Start: 16 @25700 has 2 MA's), (26, 25619), (27, 25613), (37, 25499), (39, 25469),

Gene: Zagie\_95 Start: 57881, Stop: 57654, Start Num: 18  
Candidate Starts for Zagie\_95:  
(Start: 18 @57881 has 36 MA's), (25, 57833), (34, 57743),

Gene: Zhafia\_96 Start: 57915, Stop: 57688, Start Num: 18  
Candidate Starts for Zhafia\_96:  
(Start: 18 @57915 has 36 MA's), (25, 57867), (34, 57777),