# Individual Dataset Observations

## [2022-08-03-31](https://docs.google.com/spreadsheets/d/1RF3fAUXBsK7fSL-Ivlmy1rhuB_qpumCHZIF8-ChHCNE/edit?usp=sharing)

* had to flip “Anterior-Posterior” orientation in ITK-SNAP
  + ventral side was on top
* overall very high quality dataset, good bilateral visibility
* ALA not detected by UNet
* IL1VL has 2 possible identities
* **ROI 228 (SMDVL) partially covers SAADL → this may cause issues with the traces if it registers to SAADL instead of SMDVL**
* RMER has 2 possible identities
  + one is expressing a lot of unexpected OFP
  + other one is in the nerve ring and is purple
* AIZL appears to have minor registration issue so it’s missing its characteristic purple coloring
  + compare trace with AIZR to confirm this identity
* ~~AVJR has 2 possible identities with similar properties~~
  + ~~If one ID is determined to be AVJ, idk what the other one could possibly be~~
* ADEL has the correct color in a plausible position however…
  + its ROI is almost entirely off target
  + it’s partially outside the FOV
  + it’s extremely dim
* ADA does not appear to have a left neighbor
  + the suspected candidate appears to have severe red-blue registration issue; there’s 2 distinct red and blue blobs next to each other but only the blue one has an ROI
* RIML appears to have some registration issue → there is green “leaking” out of the cell toward the median of the animal
  + could be an entirely different cell which has a merged ROI
* **ROI 212 encompasses RIH and SAADL; analyze with caution**

## [2022-07-27-31](https://docs.google.com/spreadsheets/d/1F01RXXxNxcMGwrURR65OPBV1e_XxmSblDggHs6OP5nw/edit#gid=2133273239)

* had to flip “Superior-Inferior” orientation in ITK-SNAP
  + M1 appeared to be on “left” side of the animal; I can’t see AQR for extra verification
    - M1 is only barely over the medial line; left/ right labels may need to be swapped
  + I6 is supposed to be found on the left side, but is very close to M1
* CEPVR is not obvious; there are 3 bright red cells which all resemble IL1V and are missing CEPV’s expected BFP expression
  + CEPVL does have expected BFP
  + one of the IL1VR alternative labels is likely CEPVR; have no idea which is more likely
* **URBR (77) and OLLR (12) labels may be swapped; labeled as such based on position due to dim right side in this dataset**
* URYDR (15) may just be an erroneous ROI; it’s extremely close to IL1DR and is barely visible
* the position of several lateral ganglion neurons is shuffled compared to their stereotypical positions
  + RICR is posterior to FLPR
  + ASEL, AVHL, RIV, AIZ all found at least one cell width posterior to AVD
    - AIZ in particular is further than usual
  + pg. 19 of the uglier manual shows some of these non-stereotypical positions are common enough to make it into said manual
* **RIBL (27) and ASJL (111) labels may be swapped**
  + right side of both neurons were not detected by UNet
* Not detected by UNet:
  + AIBR / AUAR alternative candidate
  + ASIL / AVB
* **I6 and I4 labels may be swapped**
* **RIMs (92, 52) and AVL (128) labels may be shuffled**
  + both RIMs express some errant BFP
* **RIS (96) may actually be DB2**
* **VB2 (143) may need to have label swapped with one of the AIMs (147, 130)**
* **SABV? (48) may be DA1; missing expected mNeptune expression either way**
* (1st audit) switched IL1Vs main label with alternatives
* (1st audit) gave AIY?s L/R labels; lowered AIYR’s confidence to below threshold due to missing BFP

## [2022-07-27-45](https://docs.google.com/spreadsheets/d/1XQ96K-O8kpFd6JqxZr_YEmrBWU6oMYCuAGtZcNzuQhM/edit#gid=2133273239)

* had to flip Superior / Inferior orientation in ITK snap due to AQR being on the “left”
* URYVR (110) is found much more anterior than usual
  + appears to be bleeding blue coloring → could be registration issue or URAVL (not detected by UNet)
  + right side is in expected position and has similar blue bleeding
* CEPVR and OLQVR share the same ROI; I left both unlabeled because it appears to be evenly distributed across both cells
* **there are 2 RMEL candidates (44, 101)**
  + 101 is much lighter and expressing a lot of unexpected OFP, but is in the correct position
  + 44 is the correct color but is in the entirely wrong ganglion, having crossed the nerve ring
    - I believe this ROI is marginally more likely based on the expression, but the positioning is very strange
    - **it’s also entirely possible that this is actually SAAVL**
* IL1V has multiple alternative possibilities again
  + IL1VR has 3 possibilities in this dataset, all expressing mNeptune and nothing else
* RID (79) is much brighter than usual, comparable to URXs
* **RMDVL (58) has 2 alternative possibilities (100, 153) which is highly unusual**
  + both alternatives are expressing unexpected BFP
    - 100’s BFP could potentially be due to bleed through from the adjacent AVAR
    - 153 BFP could possibly be from nearby AFD (undetected by UNet), but this is less likely
* **AWAL has a two ROIs (59, 162) which are roughly evenly distributed across the cell**
* AVHR and ASIR have the same UNet ROI (31); didn’t label either cell
* **AVBL is actually visible in this dataset!**
* **AWCL == AWC(OFF), AWCR == AWC(ON)**
  + AWC(OFF) should be greener than ON, which is the case here.
  + AWC(OFF) is much brighter and larger than most cells in the area which is a bit strange
* **non-zero chance AIZL (132) and AUAL (9) labels are swapped**
* **AIM (89, 84) labels may be swapped with VB2 (118)**
  + labeled based on similarity of marker expression between AIMs
* (1st audit) shuffled URB and OLQV labels to better align with expected positions
  + all 4 cells are expressing markers in similar ratios
* (1st audit) lowered IL1V confidences to below threshold; too many alternatives
* (1st audit) lowered AIA and AIY confidences; the labels may be shuffled
  + cells look nearly identical; labeled mostly based on how much BFP they have

## [2022-08-02-38](https://docs.google.com/spreadsheets/d/1aSyfY6l8zk3tEaovHWR1Vkp0S8R8DhmpwMFoRgGWBAU/edit#gid=2133273239)

* had to flip “superior-inferior” orientation in ITK-SNAP; M1 appeared to be on ‘left’ side
  + M1 was more clearly on one side than other datasets
* M4 (87) is much brighter than other datasets
  + usually I need to use the UNet ROI to detect it but it’s clearly visible
* **IL1VL (69) looks more like what I’ve been labeling as an alternative**
* **RIPL (7) is actually detected in this dataset!**
  + right side not detected
* **1L1DR-alt (114) is smaller and dimmer than initial label (166)**
  + **… possible that my criteria for labeling “alternative” IL1s should be reversed?**
* RME(L/R) (104, 159) are expressing a lot of unexpected OFP
  + no alternatives visible anywhere
* **ASGR(215) label may be swapped with AWAR (201)**
  + ASG is only expressing a tiny amount of expected BFP; very closely resembles AWA
  + the current labels are most likely
* **I’m less confident in my AWCL (ON, roi = 84) AWCR (OFF, roi = 178) labels in this dataset**
  + **pretty sure they’re both AWC, just not sure about ON / OFF-ness**
  + **OFF is described to be “greener” than ON so I labeled the one that had proportionally less BFP as OFF**
* **RIB (197, 161) could possibly be AVB**
  + **RIB is more likely based on position**
* ASJ not detected by UNet
* **RMDL** **has a split ROI (220 & 174); cell is mostly contained by 220**
* **AINR has a split ROI (213 & 195); cell is mostly contained by 195**
* ROI 39 appears to contain both AIY? and AIA?; left unlabeled to avoid ambiguity

## [2022-08-02-31](https://docs.google.com/spreadsheets/d/1b8WdlCswnYBs5MOatEsvMzXeIcvqPFdCptl4xu3Nbyo/edit#gid=2133273239)

* had to flip superior / inferior orientation in ITK-snap
  + M1, AQR candidate appeared to be on the “left”
* **NSMR (163, 110) has a split ROI**
  + **mostly contained within 110**
* **ROI 127 is a bright orange cell that I have no idea what it could be; I’ve only seen it in this area in one other dataset (**2022-07-20-01)
* 2 right-side neurons in anterior ganglion are just not there
  + i.e URYVR, URAVR
* IL1Vs and their alternative labels have much more similar (larger) sizes than other datasets
  + I wonder if diminished bleaching in this dataset contributed to this?
* RID is much brighter than most datasets
  + probably due to reduced bleaching
* AVDR (43) may actually be RIMR
  + it is missing the expected BFP (left side does have it)
  + position and color still make sense however
* **AWCL (ROI = 53) is ON; AWCR (ROI = 60) is OFF**
* **AIM (162 / 2, 26) and VB2 (48) labels may be shuffled**
  + labeled AIMs based on similarity of marker expression

## [2022-07-26-31](https://docs.google.com/spreadsheets/d/12U3T9QmN0Y3K5a281jcavq8sK5i0JGREf_ePgq3WW-M/edit#gid=2133273239)

* some registration issues in the anterior portion of the worm, mostly fine but lead to lower confidence for some IDs
* ~~left side of the animal is much dimmer than most datasets :(~~
  + I had the animal’s orientation flipped → flipped orientation in ITK-SNAP and corrected labels
* 3 candidates for CEPV that all have the same-ish color
* **AWCR (77) == OFF, AWCL (103) == ON**
  + lower confidence that AWCL is actually AWC at all
* **AIBR-alt (50) shouldn’t be present; it’s redder than AIB is usually**
  + it could possibly be AUAR but it’s very far from its usual position and there is another AUAR candidate that makes more sense
* AUAR (152 / 79) appears to have been smeared out by the registration
* **AVL (33) is also a possible candidate for RMDDR; unlikely because current RMDDR resembles RMDDL** 
  + only found a single page in the manual where AVL has this pinkish coloring
  + usually it’s yellow
  + on second look this is even less likely; orientation needed to be flipped so ROI 33 is actually on the left side
* (1st audit) lowered confidences for CEPV labels
* (1st audit) Added AWA labels

## [2022-07-26-38](https://docs.google.com/spreadsheets/d/1dRGG5zBIyoRycYTnG7bYwFUIne3o-1s39wvXAjT4UNU/edit#gid=2133273239)

* had to flip “superior / inferior” orientation in ITK-SNAP
  + M1 appeared to be on the left; I6 was on the right
* URYVR (57) is much, much further anterior than usual. URYVL (132) is in stereotypical position
  + initially was going to label 57 as an alternative to I1R
* there’s two green cells near MC that could in theory be MC, but I left them unlabeled because they are too different than anything else I’ve seen in that area
  + they were detected by the UNet and had similar all red intensity, however
* **AVD(L/R) (128, 37) & RIM(L/R) (72, 54) are expressing BFP opposite to how they’re stated to on the reporter table (RIM has BFP, AVD is missing it)**
  + **I have seen other datasets where RIM expressed BFP**
  + **cells are otherwise in their expected positions, have correct relative sizes, and have the correct colors**

## 2022-07-27-38

* flipped “superior / inferior” orientation in ITK-SNAP
* many neurons in this dataset have weird / more yellow-ish coloring. Manual channel adjustments haven’t helped much
* URAVL-alt (73) closely matches URAV description but is very far anterior; this isn’t unusual for this cell
  + there is another candidate in the expected position
  + no idea what either cell would be if not URAV
  + URAVR (12) is similarly anterior to 73
* I1s (58, 162 / 107) have odd coloring in this dataset
* AVDL (22) is more dorsal than usual; RIML (116) is right in the middle of the expected region (surrounded by AVJ, AIN, AIZ)
  + markers suggest these labels are correct
  + not sure what else RIM-alt (128) would be