

901904 - Deep-Sea Coral-Sponge Community Observatory

Week 52

1. Irene Hu
 - a. Bells and whistles to GUI so it can handle closing and opening window while system has already been in use. Required redoing some of back end.
 - b. Attempt to normalize reflectance image to Spectrolon blanks, still ongoing
 - c. Troubleshooting an unusually high temp coefficient in LED current that appeared during blank tests. Traced to slightly incorrect use of DAC
2. Alana Sherman
 - a. Testing Macro in my office. So far it seems to be working with the new card well and all functionality seems good
 - b. Running a longer test in deployment mode, after which I will set the focus and can seal up the housing

Week 51

1. Irene Hu
 - a. Tested GUI with full setup including camera, some bug fixes
 - b. Measured some blank targets for white balance / normalization

Week 50

1. Irene Hu
 - a. Assembled some photos / videos for engineering update

Week 47

1. Irene Hu
 - a. GUI worked surprisingly well with controller over UDP comms; various troubleshooting, especially related to motor

Week 46

1. Irene Hu
 - a. More bells and whistles added to GUI, ready for testing with actual controller

Week 45

1. Irene Hu

- a. Continued work on Python GUI adding comms text log, environmental sensing, various widgets
- 2. Alana Sherman
 - a. Pulled out the old Dualie near field camera to try to figure out whether an updated model will work mechanically and electrically with the existing chassis

Week 44

- 1. Irene Hu
 - a. Python GUI for the coral hugger
- 2. Paul Roberts
 - a. SWIR multispec

Week 43

- 1. Irene Hu
 - a. Deployment of coral hugger on Monday went well

Week 42

- 1. Irene Hu
 - a. Test of hugger with Ventana on Friday

Week 41

- 1. Irene Hu
 - a. Helped with various tests of assembled system in air and tub, things look pretty good

Week 40

- 1. Irene Hu
 - a. Help Paul with chassis wiring and various troubleshooting after wiring, updated documentation

Week 39

- 1. Irene Hu
 - a. Motor controller works, finished troubleshooting non-working channels, UDP comms, etc

Week 38

- 1. Irene Hu
 - a. Troubleshooting for various problems including motor controller

Week 37

1. Irene Hu
 - a. Comms to motor controller from cpu via RS485 board works; made various cables
 - b. Code for motor controller
 - c. System diagram updates
2. Paul Roberts
 - a. SWIR camera and backlight chassis assembly

Week 36

1. Irene Hu
 - a. Troubleshooting connector issues
 - b. Dual-controller comms and coordination seems to be working
2. Paul Roberts
 - a. SWIR camera chassis
 - b. SWIR backlight chassis

Week 35

1. Irene Hu
 - a. Various whack-a-mole troubleshooting for two board stacks
2. Paul Roberts
 - a. SWIR controller hardware/software support
3. Alana Sherman
 - a. Steve and I took a battery inventory and convinced ourselves that we budgeted the right amount for next year

Week 34

1. Irene Hu
 - a. Troubleshooting controller-controller comms; software and hardware issues
 - b. Wiring diagram

Week 33

1. Irene Hu
 - a. RS485 interface board sent out for fab
 - b. Troubleshooting controller-to-controller comms
 - c. Started work on wiring diagrams

Week 32

1. Irene Hu
 - a. RS485 interface board almost done in Kicad

2. Paul Roberts
 - a. SWIR system build prep

Week 31

1. Irene Hu
 - a. Working on small RS485 interface board for motor driver

Week 29

1. Alana Sherman
 - a. Some digging to figure out what type of lens we are using on the Mega

Week 26

1. Alana Sherman
 - a. Testing new larger card for macro- research and testing seem to indicate it will work
 - b. Remove and disposed of Li batt from Macro

Week 25

1. Alana Sherman
 - a. Trying out a 1TB SD card on the Macro camera. Recording lots of video to see if there are any issues are the card fills up.

Week 24

1. Alana Sherman
 - a. Trying out some bigger memory cards

Week 23

1. Irene Hu
 - a. After extensive troubleshooting, PWM-based linear servo works; issue with library not working well with 8-bit timers, switched ports to 16-bit
 - b. Looked into RS485 for external motor

Week 22

1. Irene Hu
 - a. Tests with internal linear actuator; PWM is not working
2. Alana Sherman
 - a. Looked into data storage options for Coral Macro

Week 21

1. Irene Hu
 - a. Code for UDP comms (requires some restructuring of other code)
 - b. Testing controller-controller comms, servo motor PWM code
2. Alana Sherman
 - a. Trying to figure out expanding image storage on Macro

Week 20

1. Irene Hu
 - a. SWIR multispec front light working with camera, minor troubleshooting
 - b. Code for coordination with backlight

Week 19

1. Irene Hu
 - a. Testing SWIR software with controller; after minor troubleshooting, seems to work
2. Paul Roberts
 - a. SWIR chassis design

Week 14

1. Irene Hu
 - a. Added more features to SWIR code including linear actuator (PWM based), current measurement (INA209), get system data
 - b. Commands list and list of tests
 - c. System diagram

Week 13

1. Irene Hu
 - a. Working on code for SWIR camera
2. Paul Roberts
 - a. SWIR controller assembly and testing

Week 12

1. Irene Hu
 - a. Continue writing code
2. Paul Roberts
 - a. Modeling SWIR camera internals

Week 11

1. Irene Hu
 - a. Writing code

2. Paul Roberts
 - a. SWIR camera concept review

Week 10

1. Paul Roberts
 - a. Mechanical review of SWIR housing

Week 9

1. Irene Hu
 - a. Working on code
2. Paul Roberts
 - a. SWIR controller fab
 - b. Housing design review

Week 8

1. Paul Roberts
 - a. SWIR controller layout

Week 7

1. Irene Hu
 - a. Trying to order some LEDs using new accounting system
 - b. Some discussions w/ Paul re: circuits and code; set up new code on bitbucket
2. Paul Roberts
 - a. SWIR controller layout

Week 6

1. Irene Hu
 - a. Researched some more LEDs
 - b. Code planning and other discussions w/ Paul
2. Paul Roberts
 - a. SWIR system controller layout

Week 5

1. Irene Hu
 - a. Circuit review w/ Paul
 - b. Compile more LED info, donut hole LED pattern
2. Paul Roberts
 - a. SWIR Controller design

Week 4

1. Irene Hu
 - a. LED ring mockups to try to cram as many LEDs as possible in a symmetrical way
 - b. Graphed a lot of LED and other spectra to help pick LEDs
 - c. Reviewed Paul's circuits

Week 3

1. Irene Hu
 - a. Discussion meeting and some follow up tasks in coordination with Paul
2. Paul Roberts
 - a. SWIR System controller
 - b. SWIR strobe design