Proto Rover Deployment #19 Dive Plan
v 1.0.0 25Jun09
P. McGill

Dive Objective: Attach Rover to MARS port and test power/Ethernet connection. Drive Rover away from port and watch tether deployment. Verify correct function of valves, cameras, and test fluor cam and tether cam for first time.

Deployment Date: 7/7/09
Recovery Date: _____
Person performing topside checklist: AS MARS Test

Pre-deployment:

1. Install Rover battery shorting plug and deck comms cable.
2. Establish reliable comms with Rover through deck comms cable.
3. Run syntax check on mission code.
4. Run predive test program and verify correct operation of the following systems:
    a. Valve Pumps run
    b. Current Meter returns data
    c. Rack motors lower chambers, limit switches stop motors, and racks return home
    d. Propulsion Motor controllers communicate
    e. Relay boards activate all relays
    f. Stir Motors rotate
    g. Optodes return data
    h. Cleaning Pumps run
    i. Chamber Cameras return images
    j. Transit Camera returns images
    k. Fluor Camera returns images (bring fluor target)
    l. Tether Camera returns images cam 4 bad
5. Prime Valve Pump hosing with water on both stbd and port.
6. Power on the Acoustic Modem and wait for it to chirp. If no chirp is heard after ten seconds, cycle the power until the chirp is heard.
7. Check all flotation mechanically secure.
8. Check and record propulsion motor and rack comp oil levels.
    a. Port propulsion comp level: 4.75
    b. Stbd propulsion comp level: 4.5
    c. Port rack comp level: 5
    d. Stbd rack comp level: 5.2
9. Inspect all comp oil hoses and fitting for damage and leaks.
10. Check that Drop Weight is installed properly and free to drop.
11. Remove Drop Weight safety bars.
12. Activate Argos beacon on Rover, verifying operation with Cat's Meow.
13. Activate Strobe and VHF Beacon on Rover, noting Beacon channel number.
    a. Beacon channel number: 159.480 B
14. Note HomerPro channel number.

SHORT PLUG

a. HomerPro channel number: 26

15. Perform final software checks:
    a. Ensure software isn't in time-warping mode.
    b. **Check deployment plan list in auto_rover.rb file** NA
    c. **Copy plan files to working directory.**
16. Issue software command to start Rover programmed behavior, noting the exact time.
    a. Rover start time: 8:29 PDT PDT
17. Unplug Rover deck comms cable and install dummy plug in its place.
18. Check all cable connectors and dummies installed and tight.
19. Check for tools left on and in Rover frame.
20. Remove Rover hold-down straps.

Deployment:

21. Deploy Rover and Recovery Buoy, noting exact time of launch.
    a. Rover launch time: 0837 PDT 36 42,742 N 122 11.205 W
22. Deploy topside Acoustic Modem Transducer from ship after notifying bridge.
23. Establish comms between Rover and ship with Acoustic Modem and track Rover descent to at least 500m.
24. Track Rover descent with HomerPro and note estimated time of landing.
    a. Rover landing time: 16:01 UTC PDT at 68m 313° bearing
25. Raise topside Acoustic Modem Transducer to safe depth, and then notify bridge.

On Bottom:

26. Check Rover comp levels on bottom with ROV cameras.
    a. Port propulsion comp level: 4
    b. Stbd propulsion comp level: 4+
    c. Port rack comp level: 4.5
    d. Stbd rack comp level: 5
27. Record depth and location of Rover
    a. Depth: 890 m
    b. Latitude: 36 42,7856 deg
    c. Longitude: 122 11.2608 deg
28. Estimate speed and direction of bottom currents as seen by ROV
    a. Current speed: 5 cm/sec
    b. Current direction: 296 magnetic
29. Observe
    a. Launch phase (no activity for 2 min from launch)
    b. Rover moving ~~3.5~~ 1.5 m to new site, taking 3 transit images 5-6, every 1.5m
    c. Rover waiting for sediment to settle (2 min)
    d. Camera Light activation during frame capture (~30 sec) Rover Cam
    e. Valves opening (~15 sec)
    f. Chamber insertion and Sediment Switch activation (~1 min)
    g. Valves closing (~5 sec)
    h. Camera Light activation during frame capture (~30 sec)
    i. Stir Motor rotation and optode reading (~1 min)

Start Time

08:29 PDT

15:29 UTC