

*Marcus Langseth Science Oversight Committee  
San Diego, CA  
May 20-21, 2008*

*Chair's Remarks*



# Agenda

**May 20**

**08:00 Continental Breakfast**

**08:30 Introductions, overview of meeting agenda - Steve Holbrook,**

**08:45 Current Status and Challenges**

- LDEO perspective - Mike Purdy, Paul Ljunggren and Al Walsh
- NSF perspective - Jim Holik, Linda Goad and Bill Lang
- MLSOC perspective - Steve

**11:30 Lunch**

**12:30 Visit M.G. Langseth at MARFAC**

**14:30 Key Issues**

**16:00 Personnel and Technical Support**

**17:00 MLSOC Executive Session (non-LDEO members)**

**May 21**

**08:00 Continental Breakfast**

**08:30 Shakedown & Calibration cruises**

**09:30 Scheduling**

**11:00 Equipment to be requested in upcoming equipment proposals**

**12:00 Lunch**

**12:30 MMO Issues**

**13:30 MLSOC Outreach and Community Input to MLSOC**

**14:30 Miscellany**

**15:30 Future plans for MLSOC action items and activities**





## *Overview*

1. Summary of First 3 Cruises
2. Areas of Concern
3. MLSOC Business Items



## Summary of First Three Cruises

MGL0804 - Costa Rica I (Feb-March)

MGL0807 - Costa Rica II (March-April)

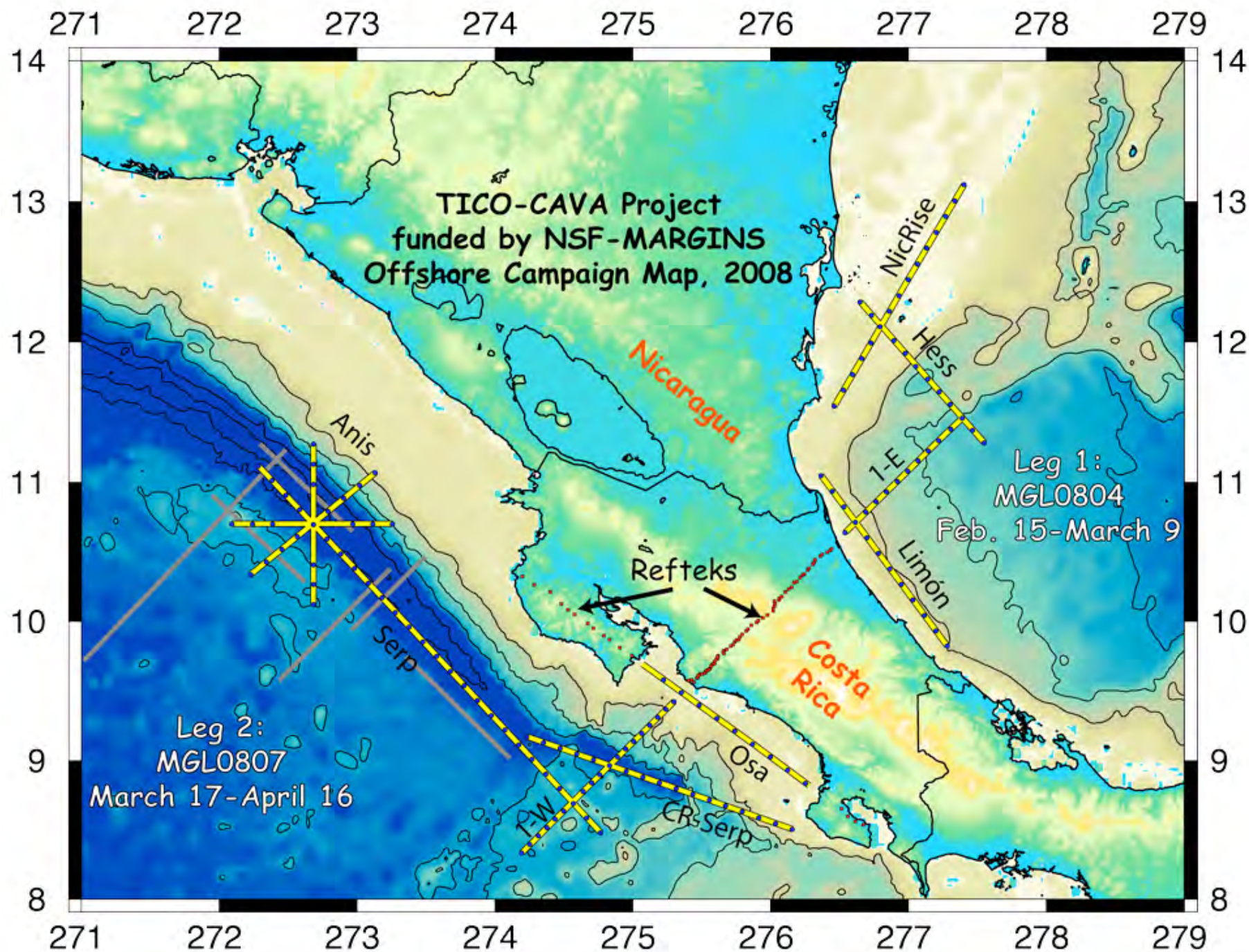
MGL0808 - EPR/McGuire (April-May)

**All Successful**

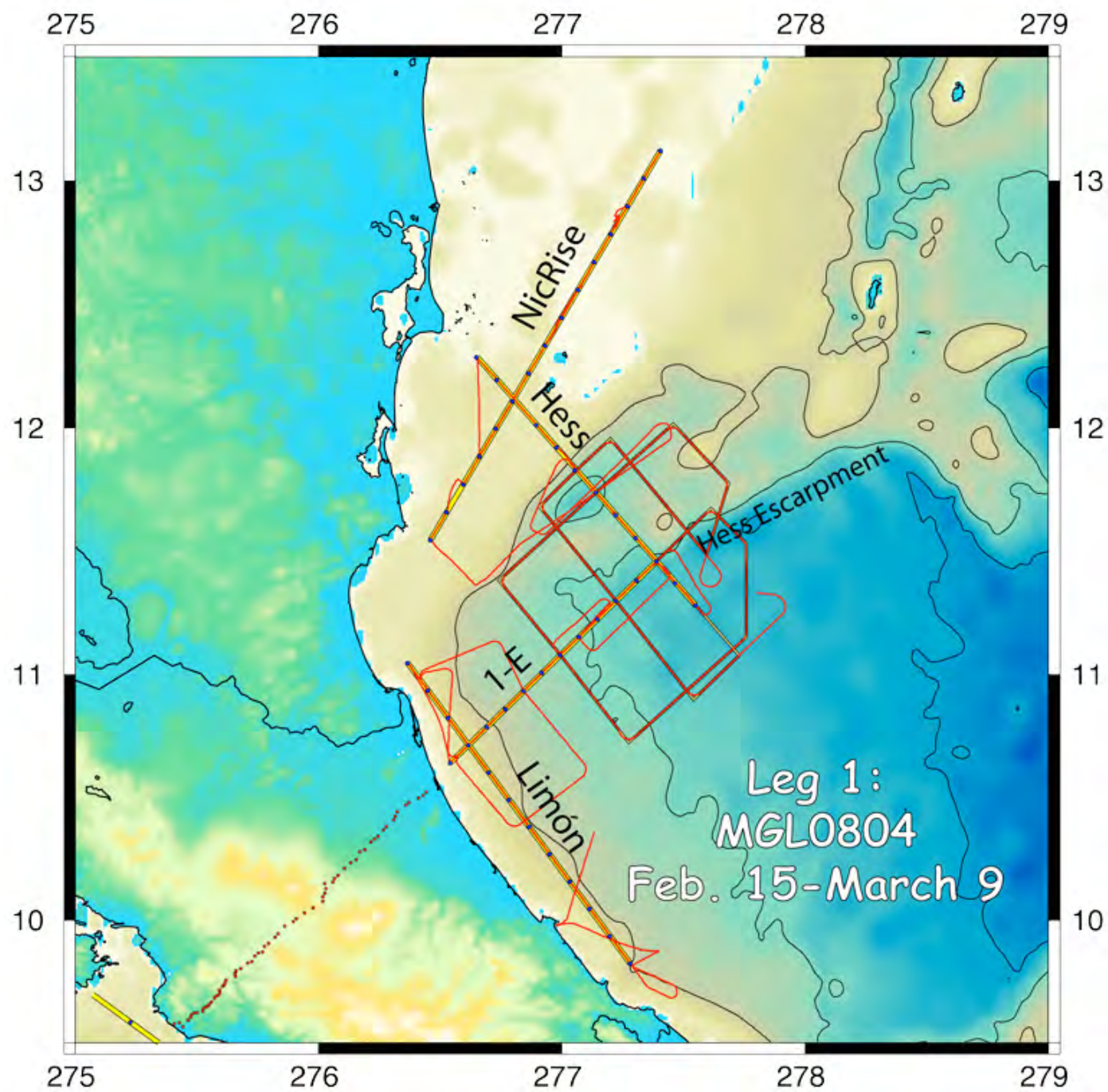
**Numerous issues and problems remain**











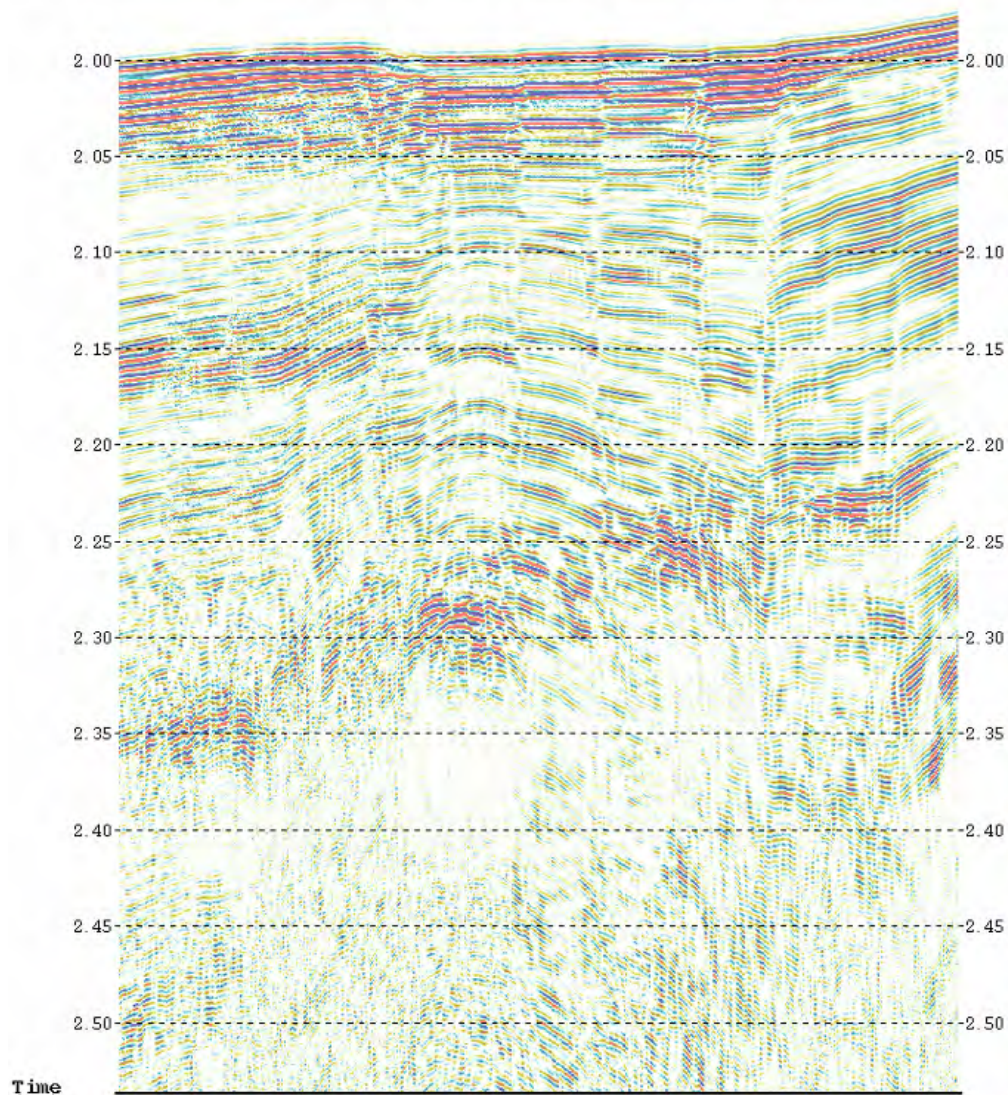


CDP  
SEQNO

HG6 - hires stack inner 16 traces 200-600 hz B

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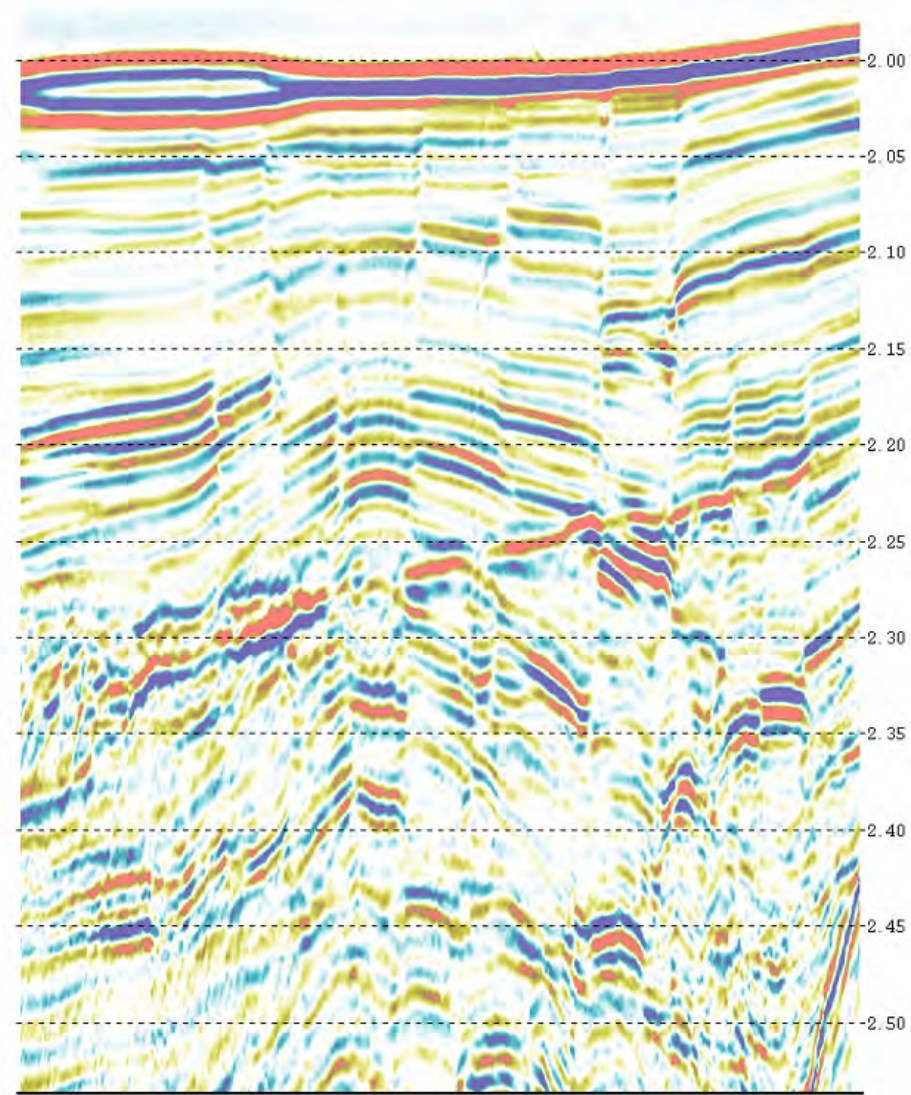
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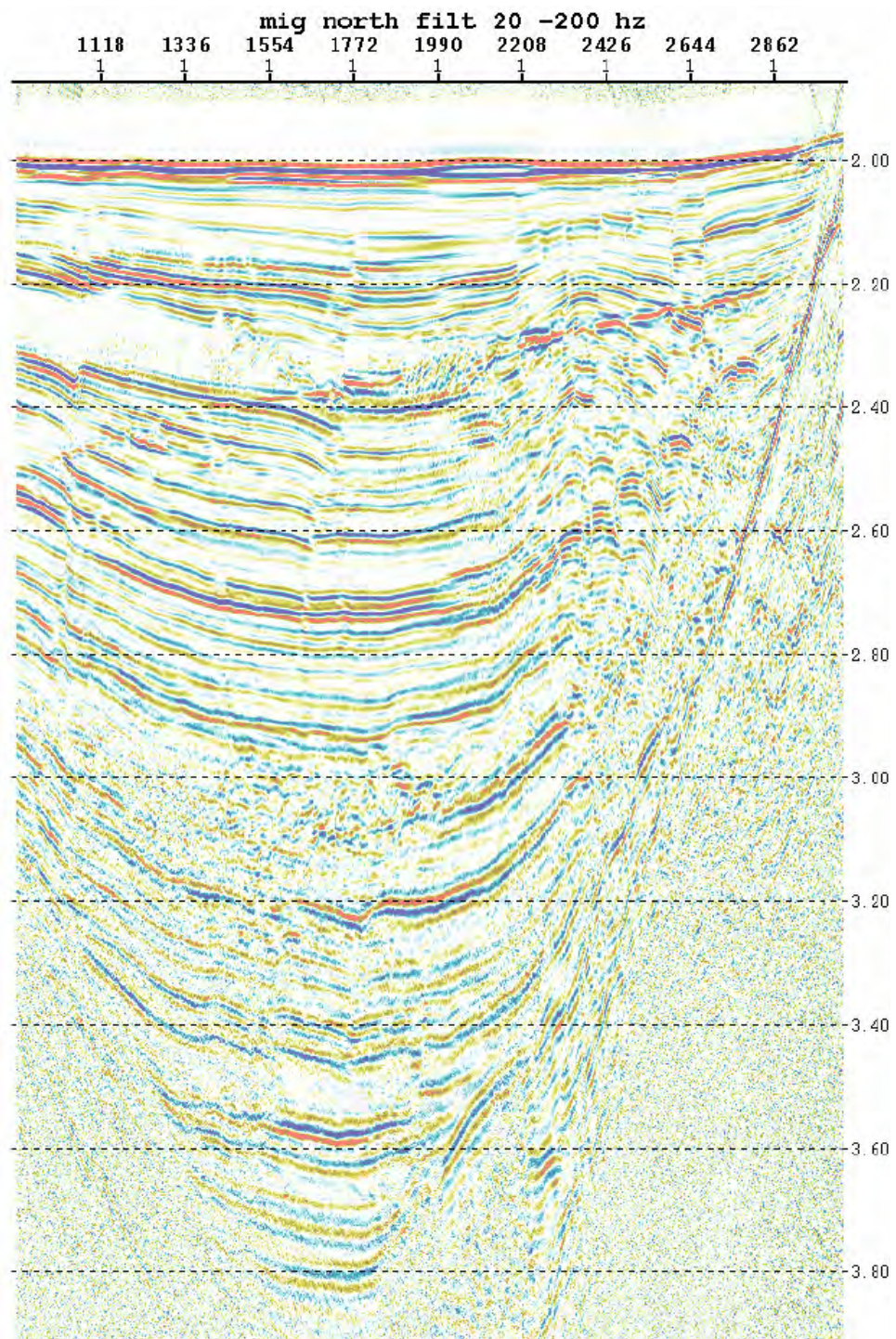
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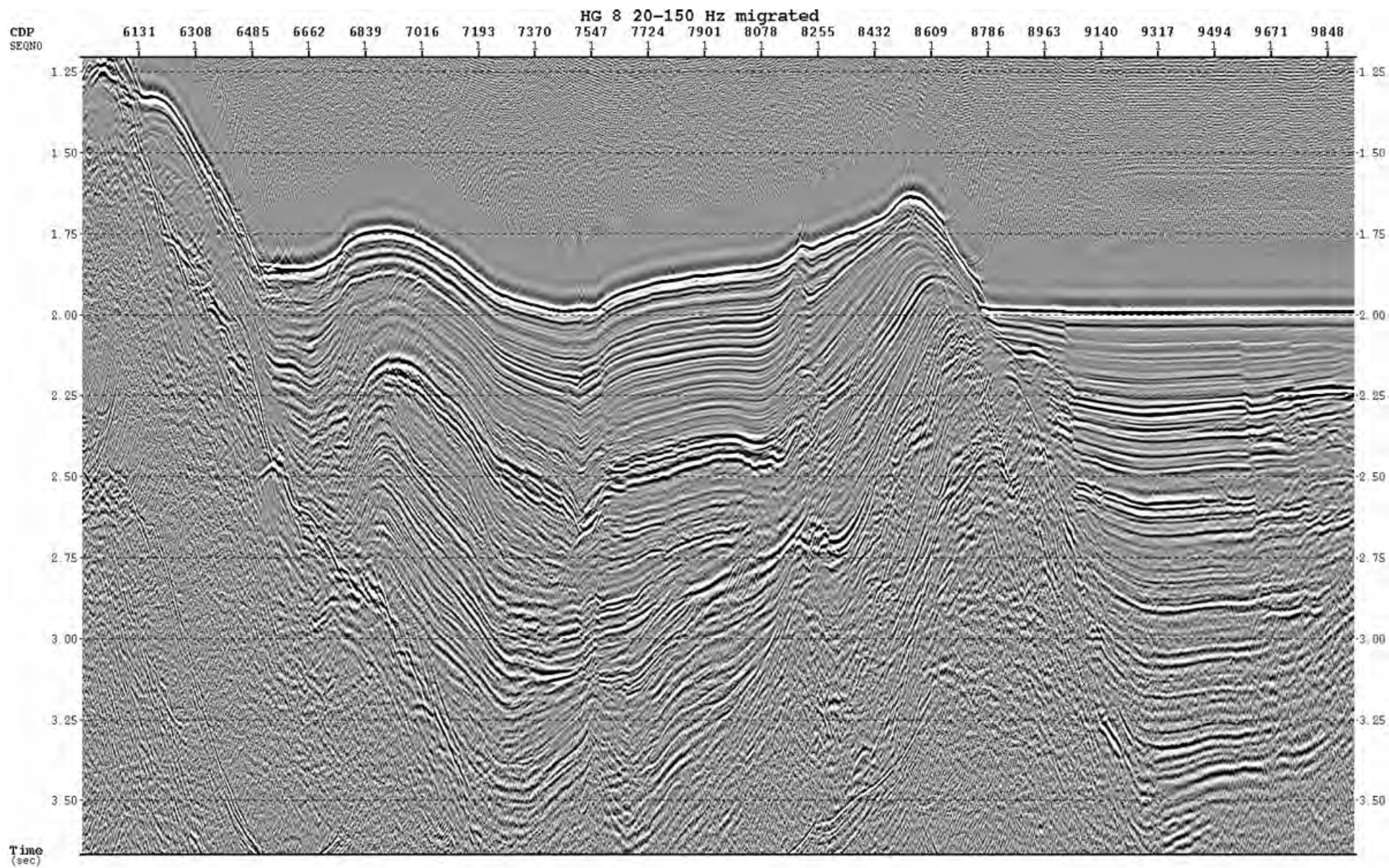
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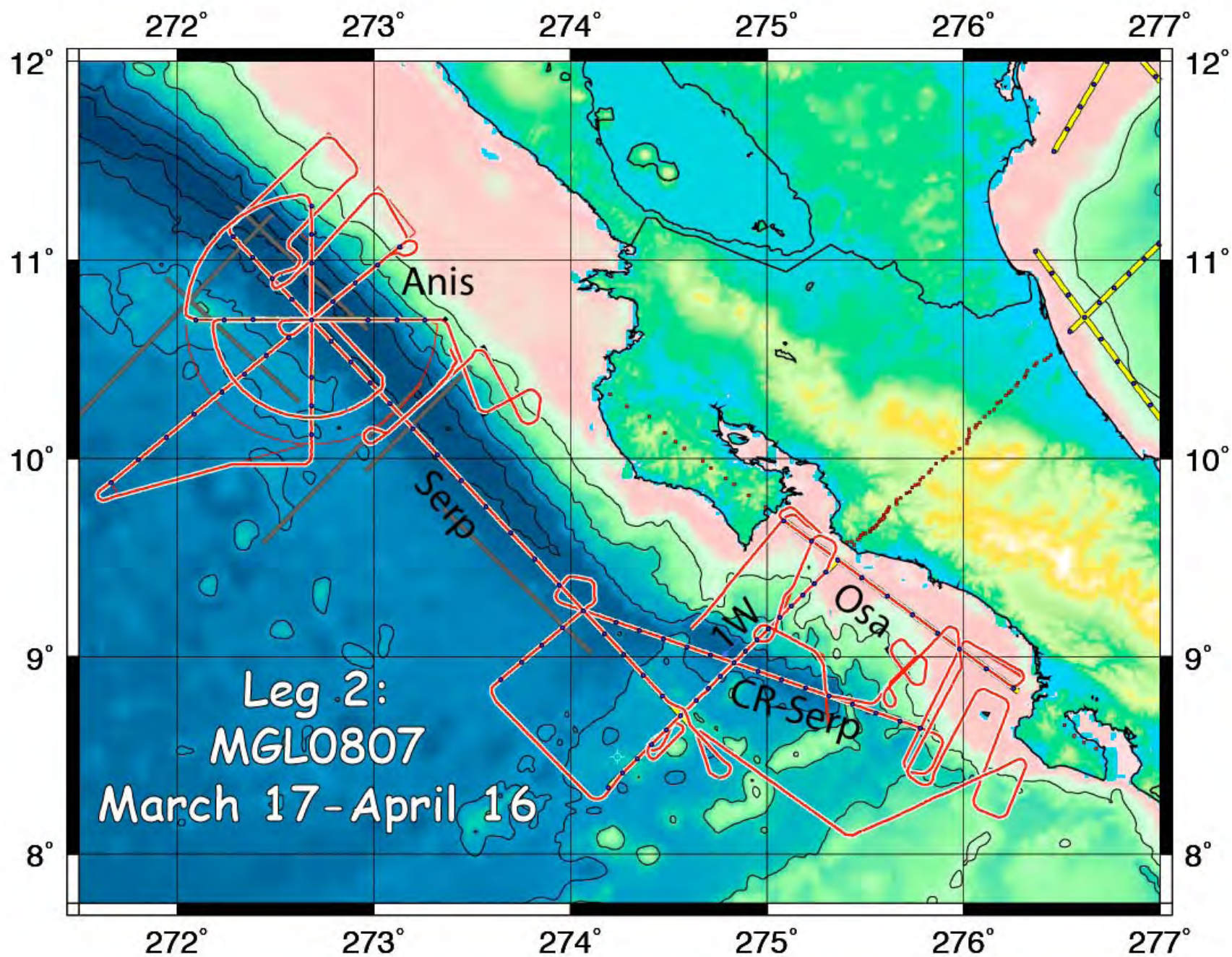




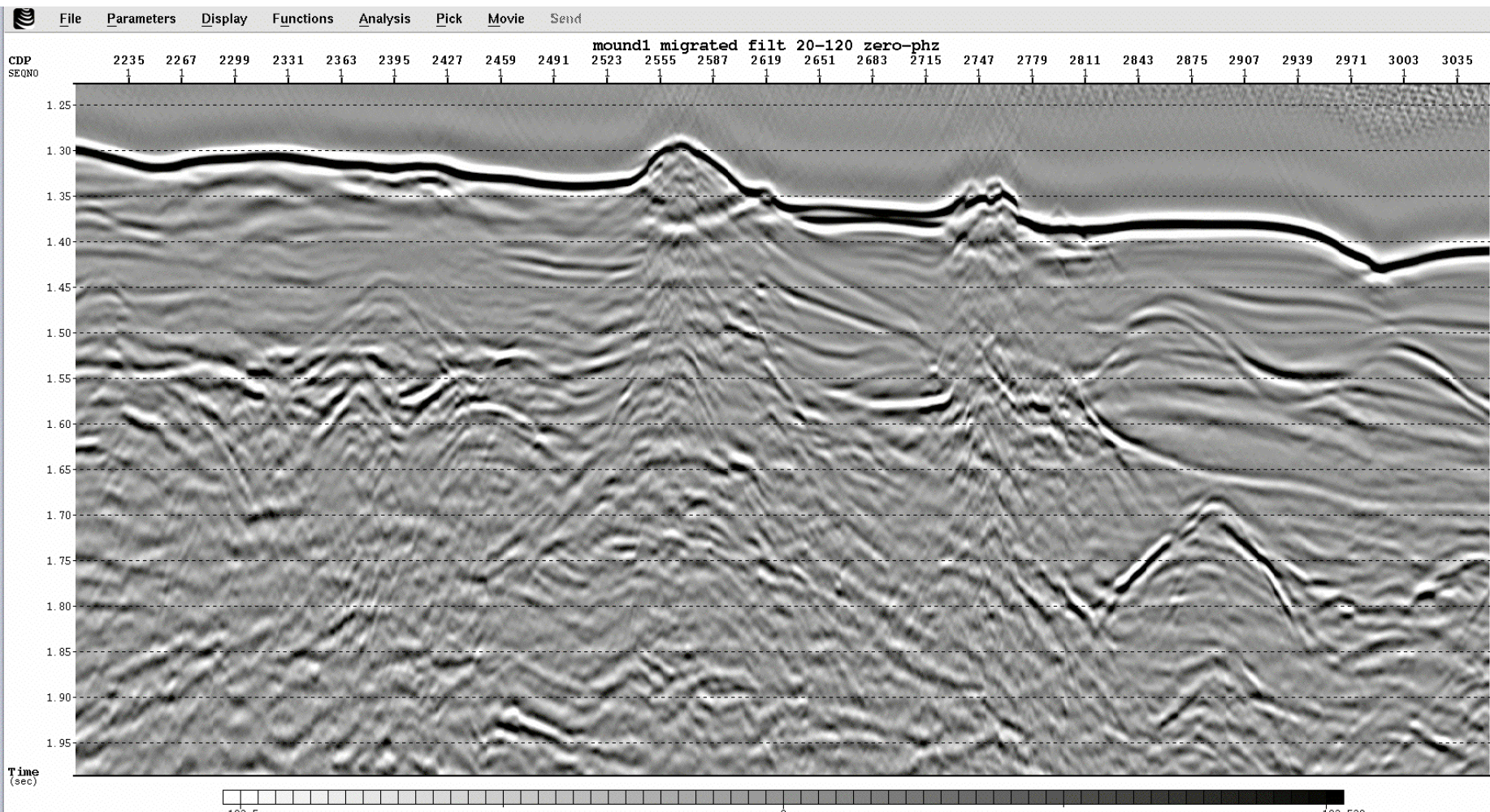




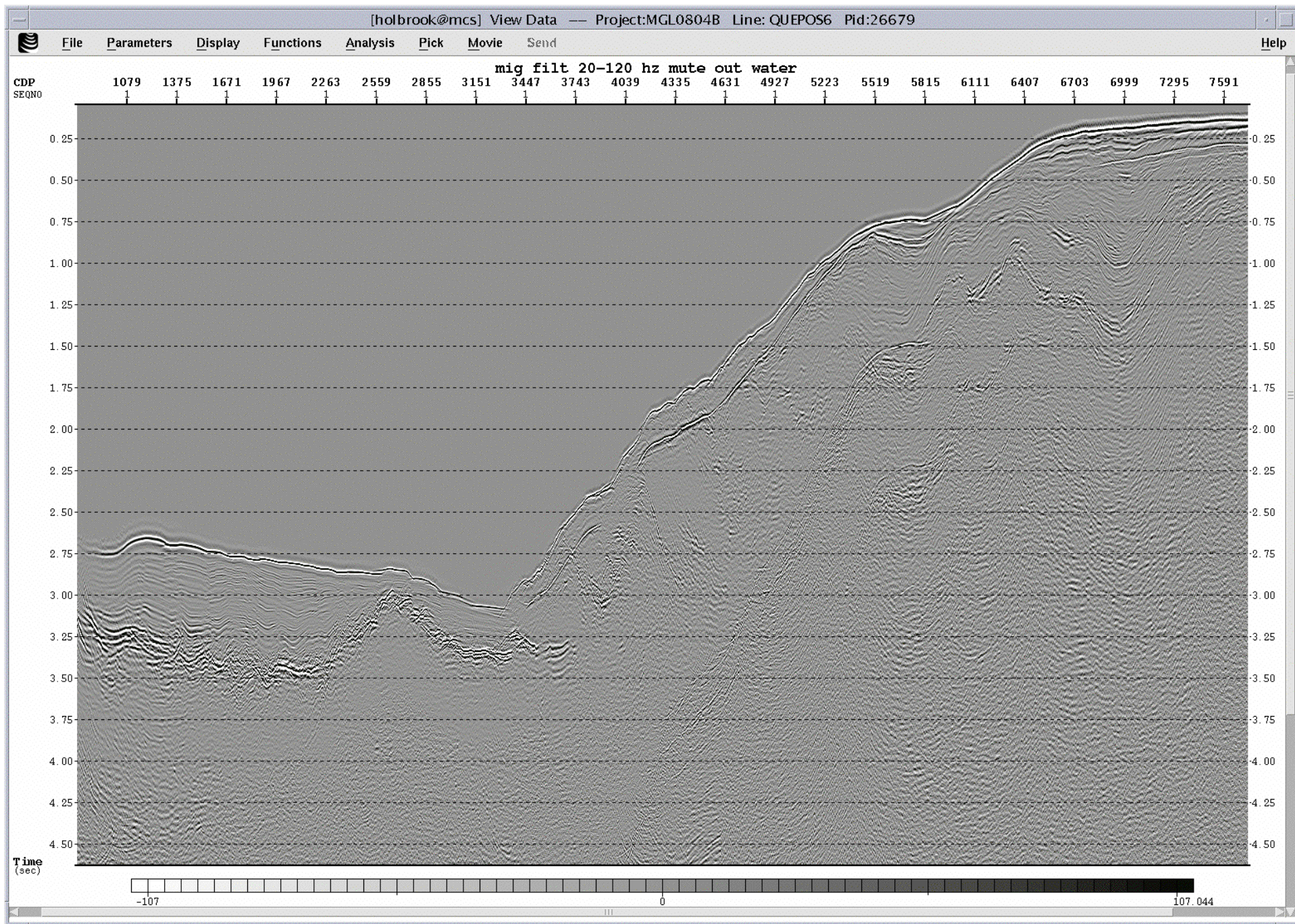




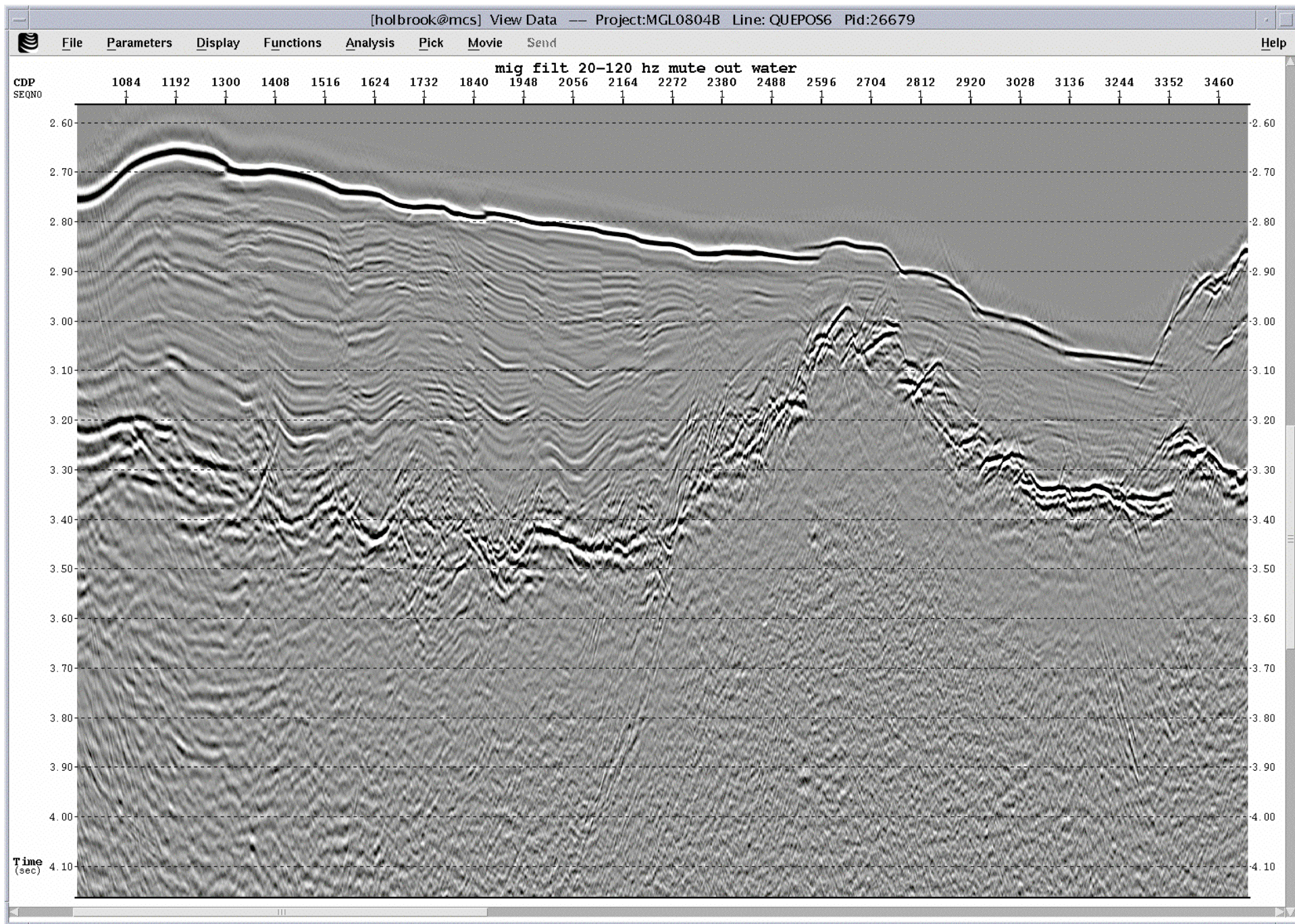




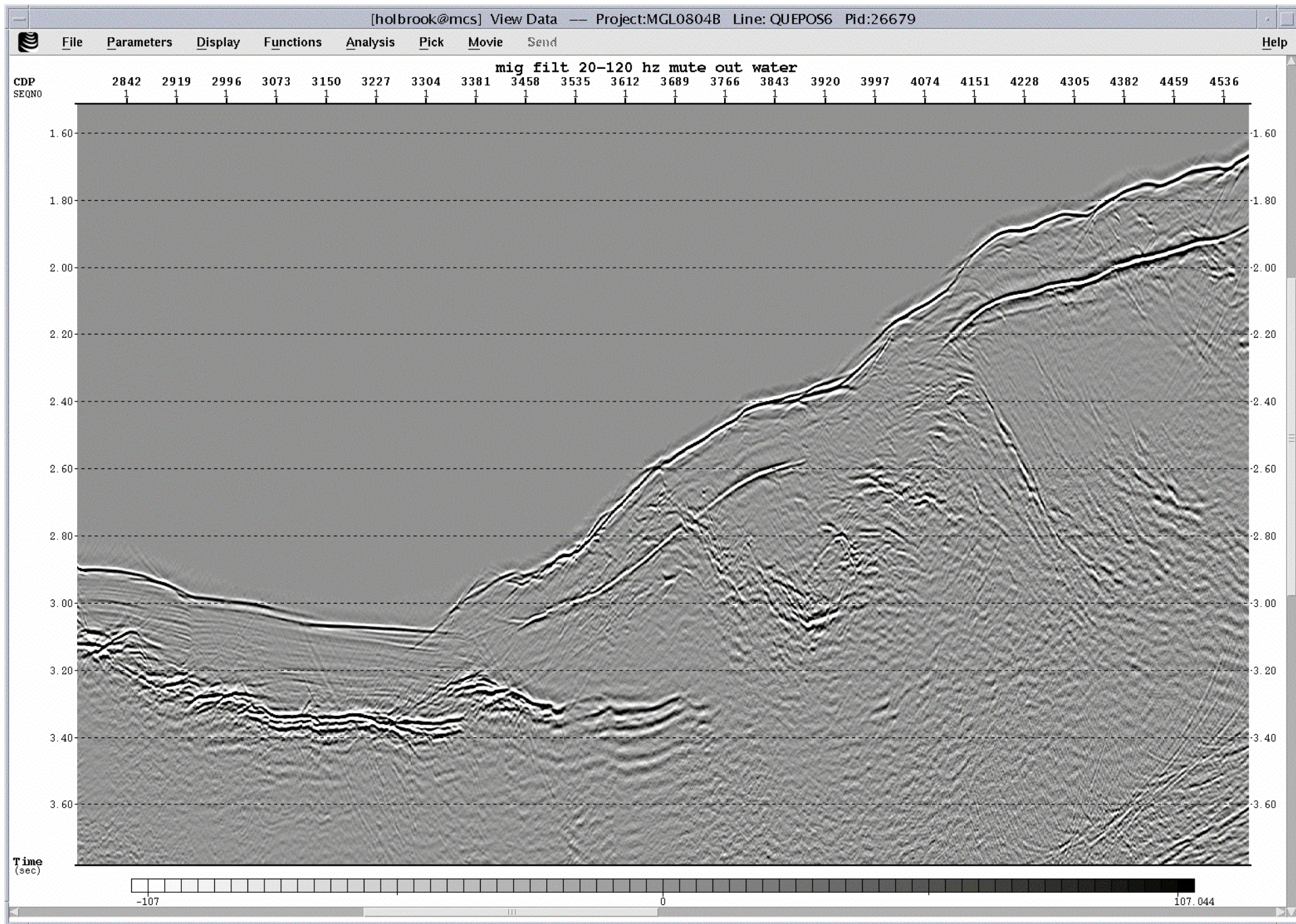




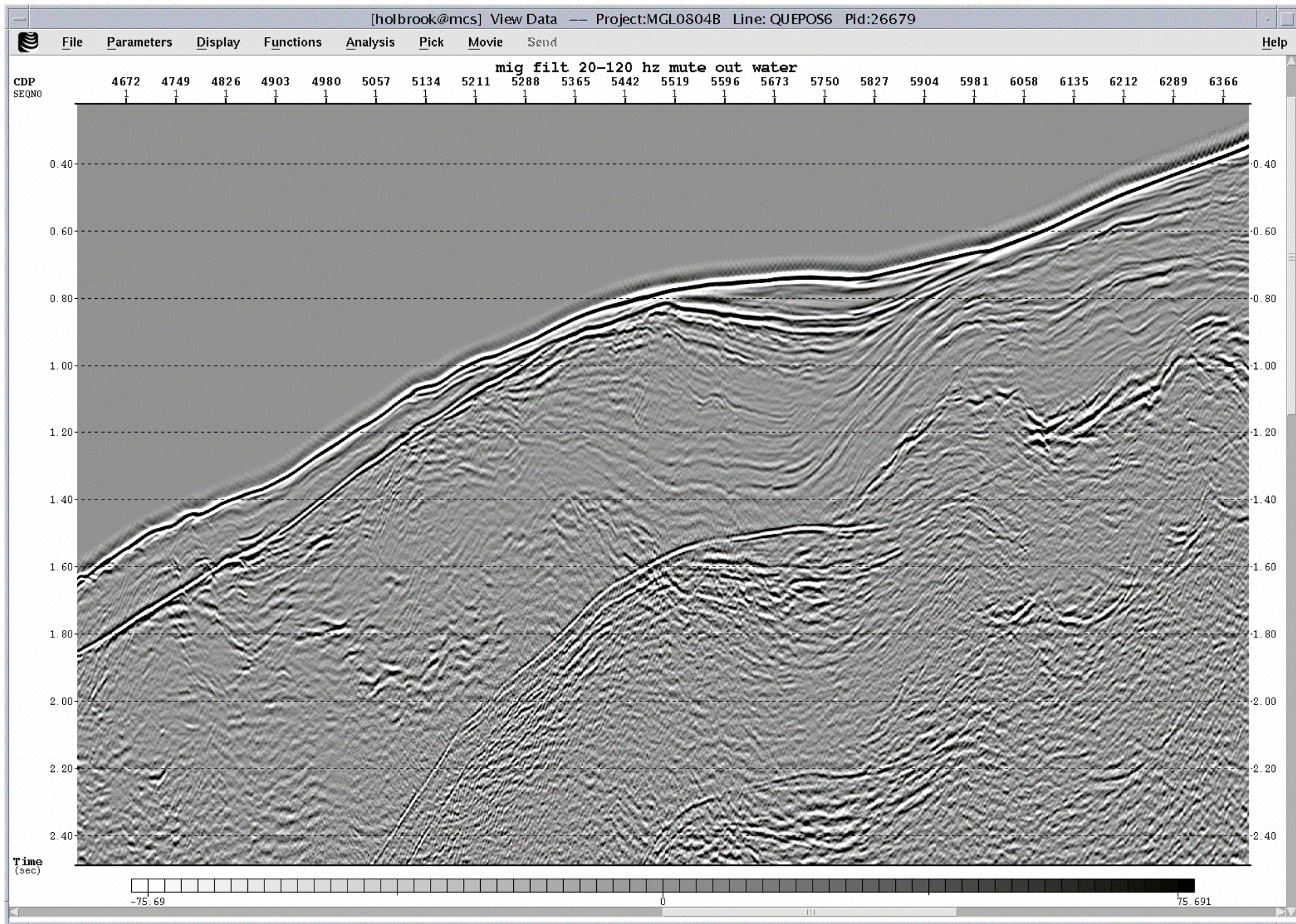




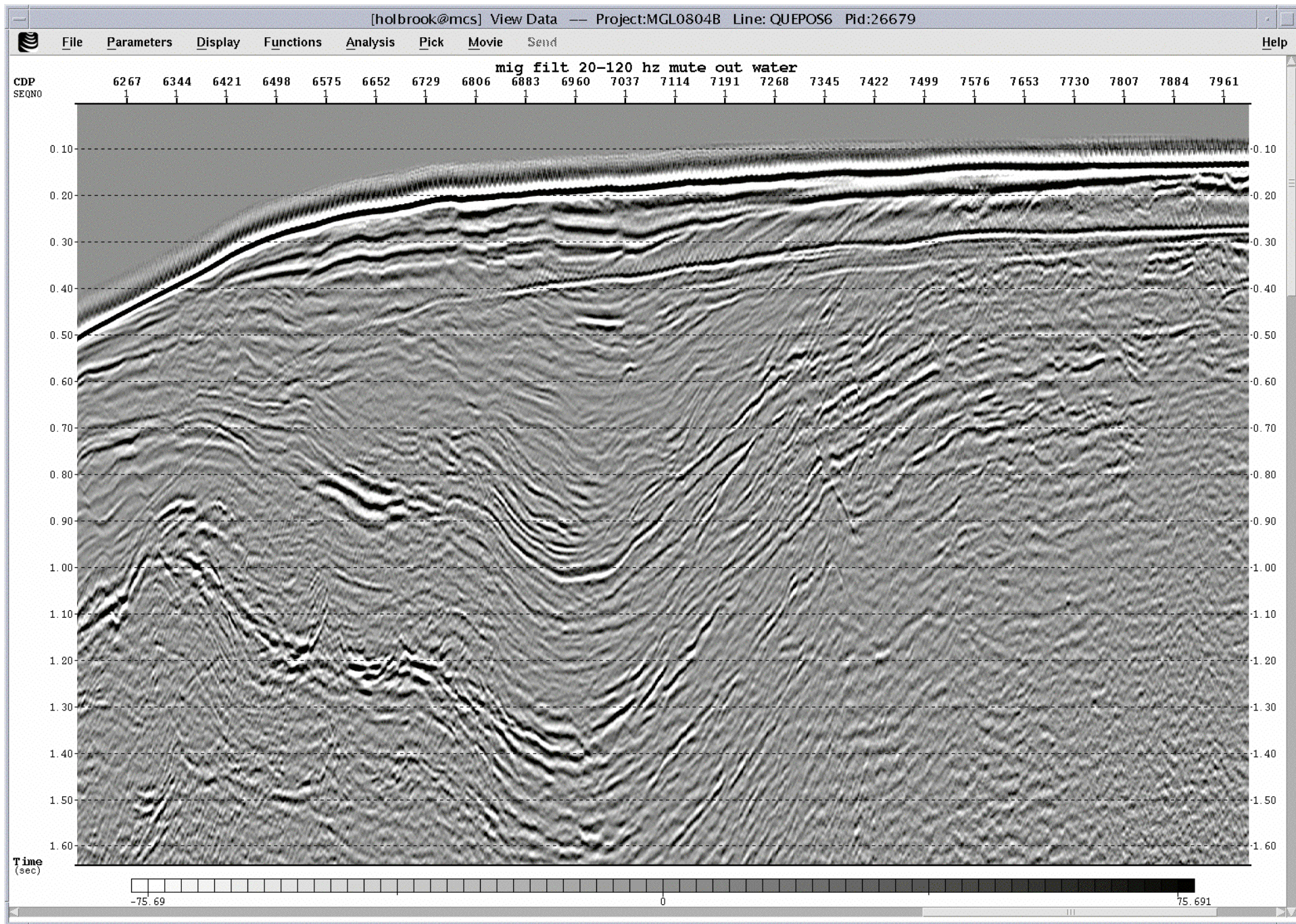






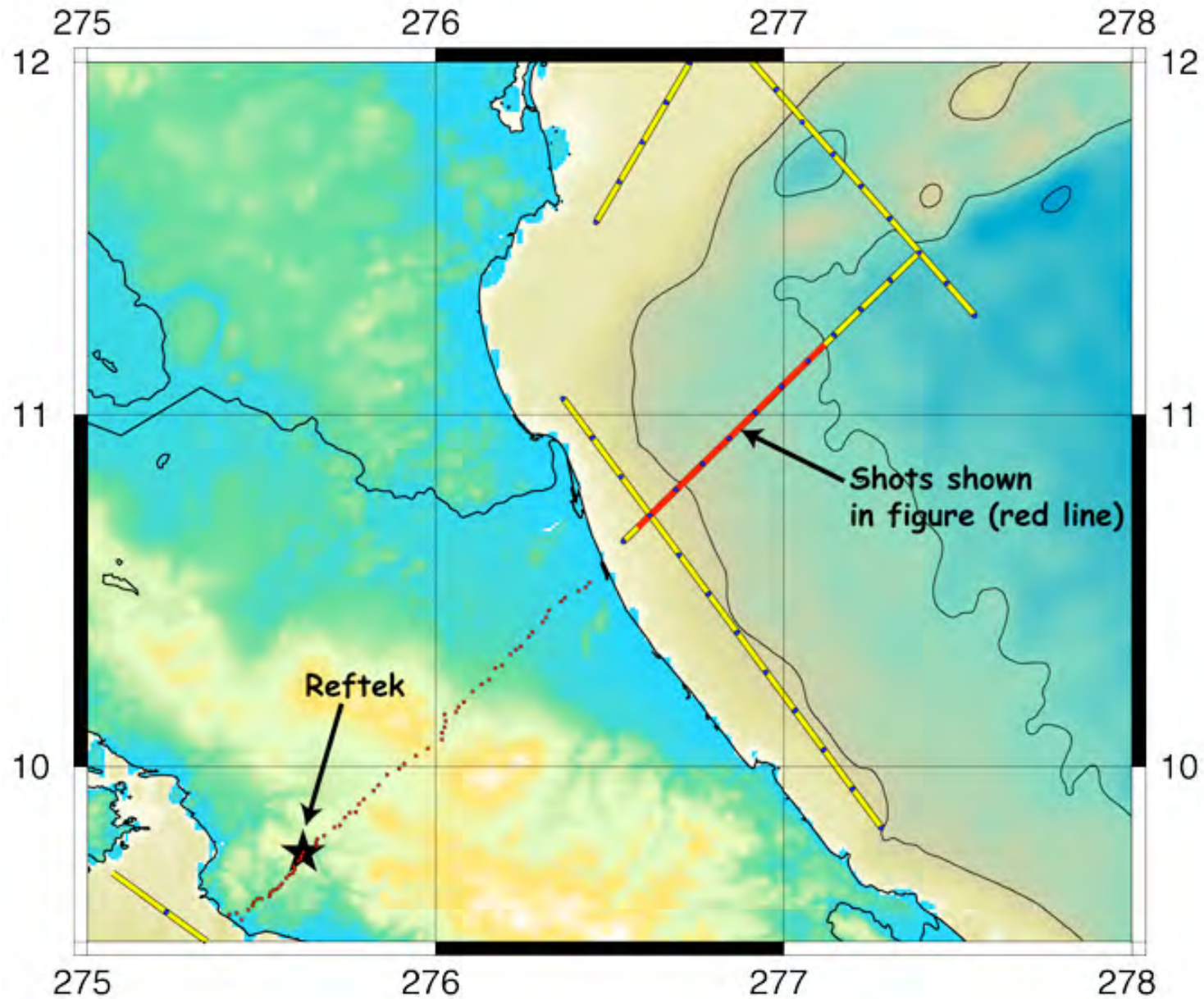






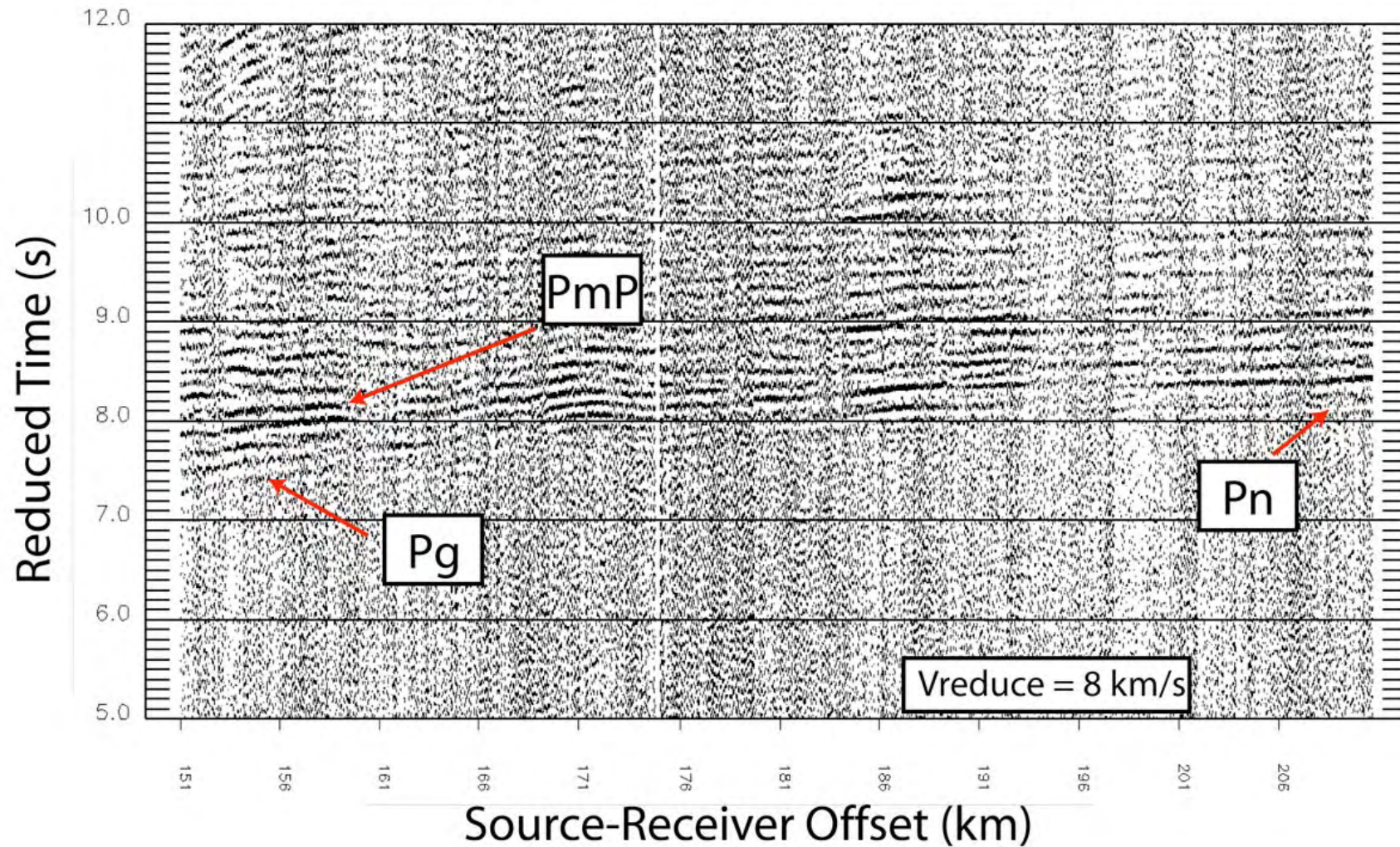


# Onshore-Offshore Seismic Data

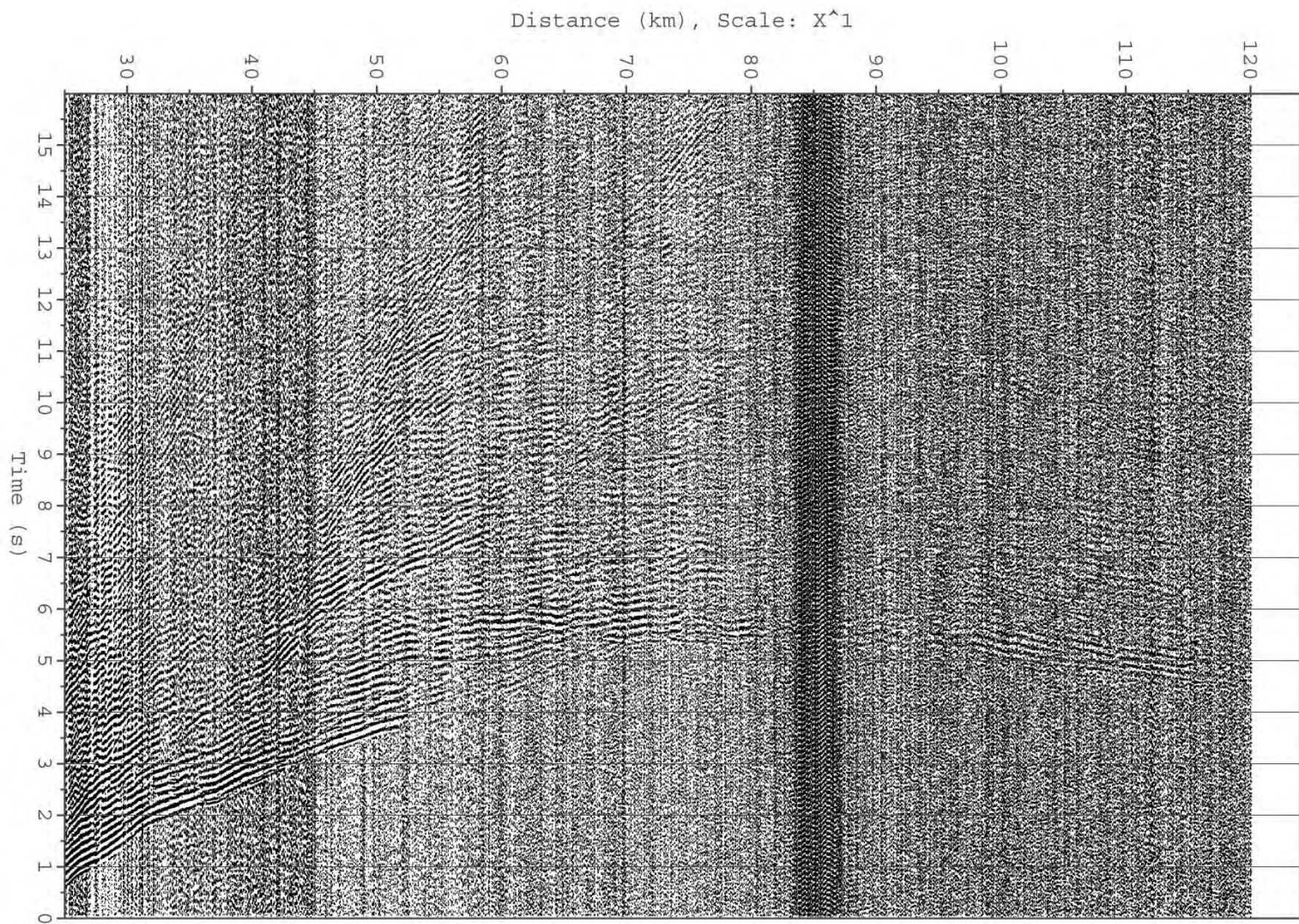




# Onshore-Offshore Seismic Data

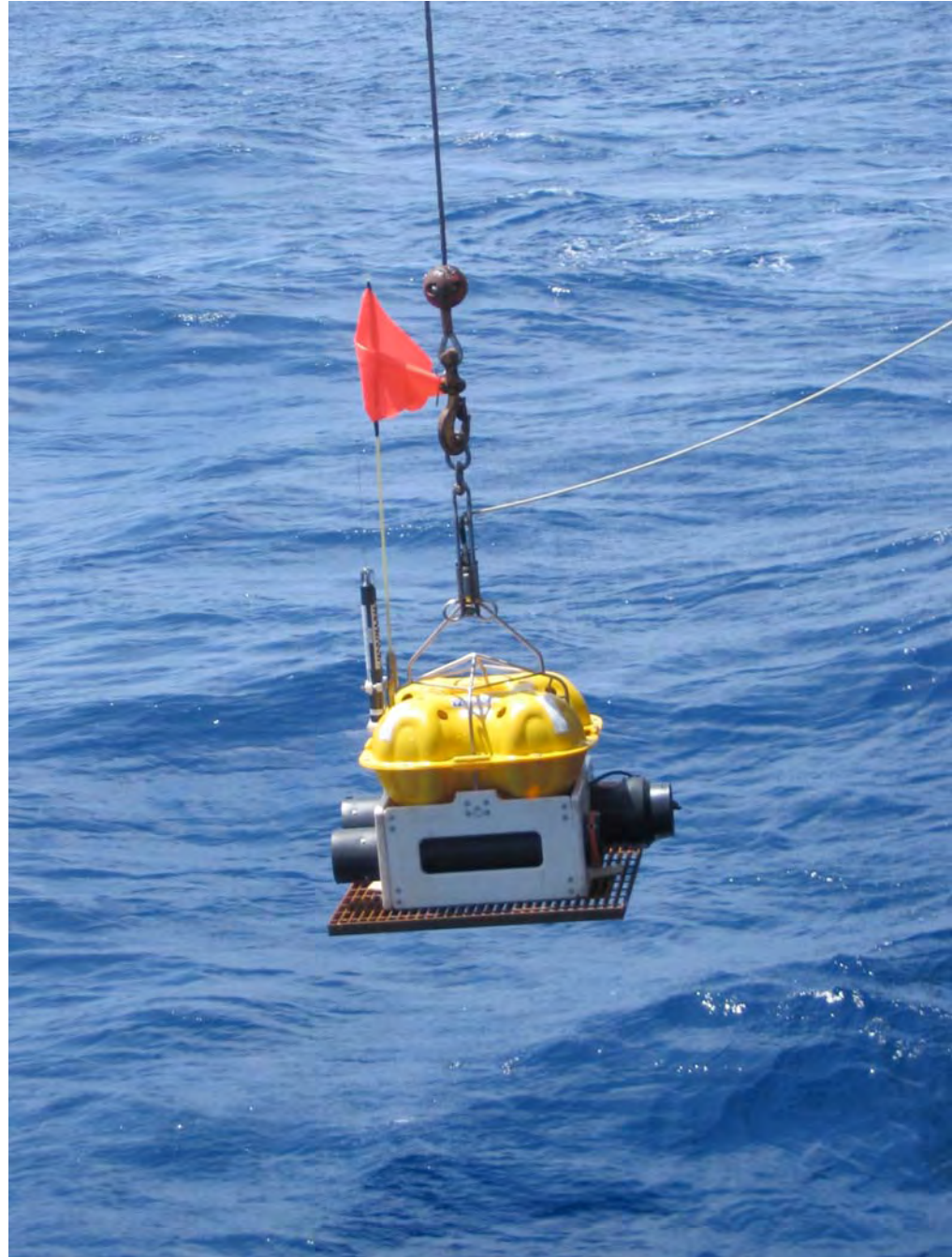




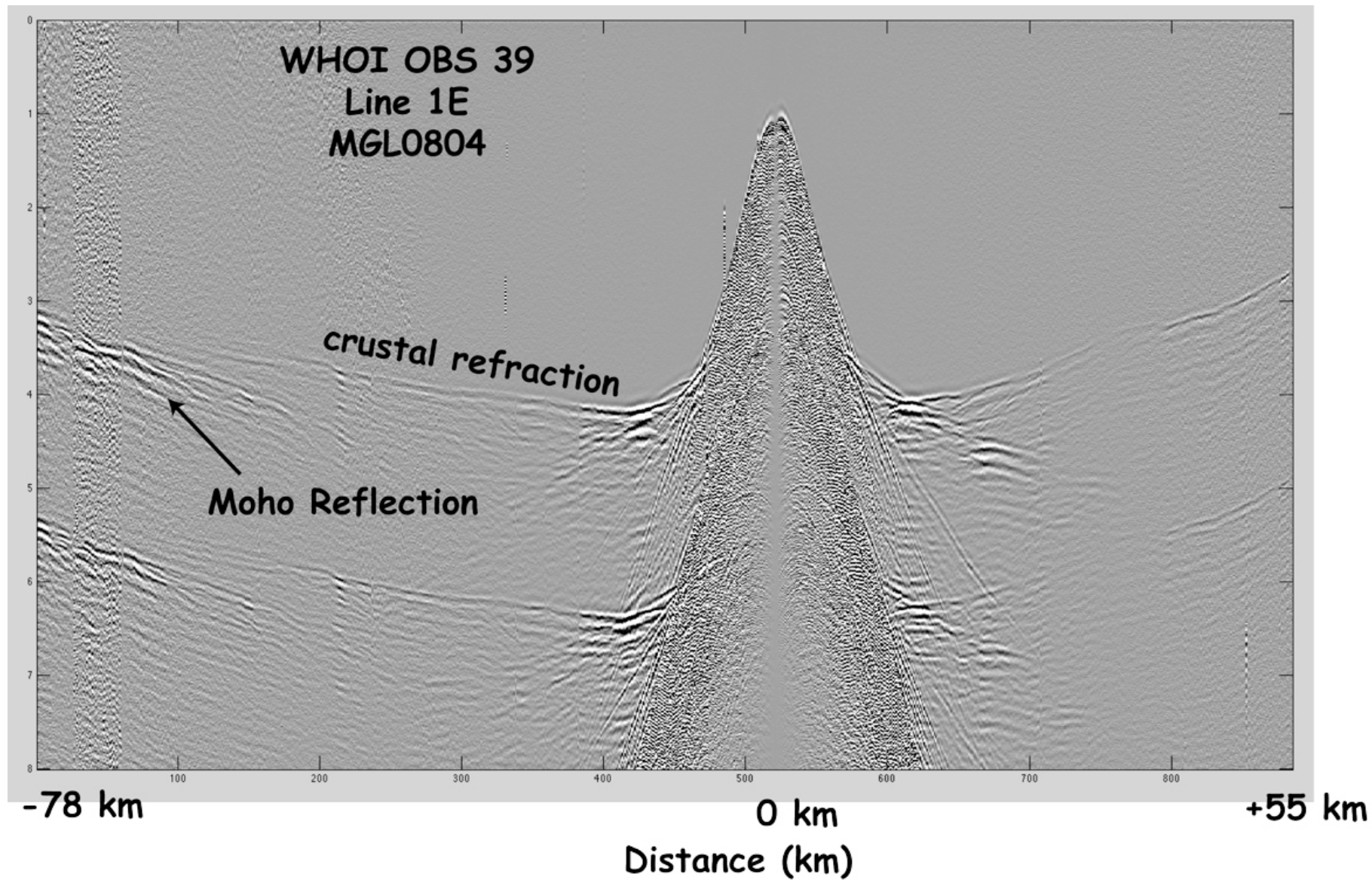




## Ocean-Bottom Seismometers (OBS)









A photograph taken from the deck of a ship, showing oceanographic equipment. A long, white, cylindrical instrument is suspended by a red strap from a metal frame. The instrument is positioned over the blue ocean. In the foreground, a large, dark, cylindrical object, possibly a buoy or part of the ship's structure, is visible. The sky is clear and blue.

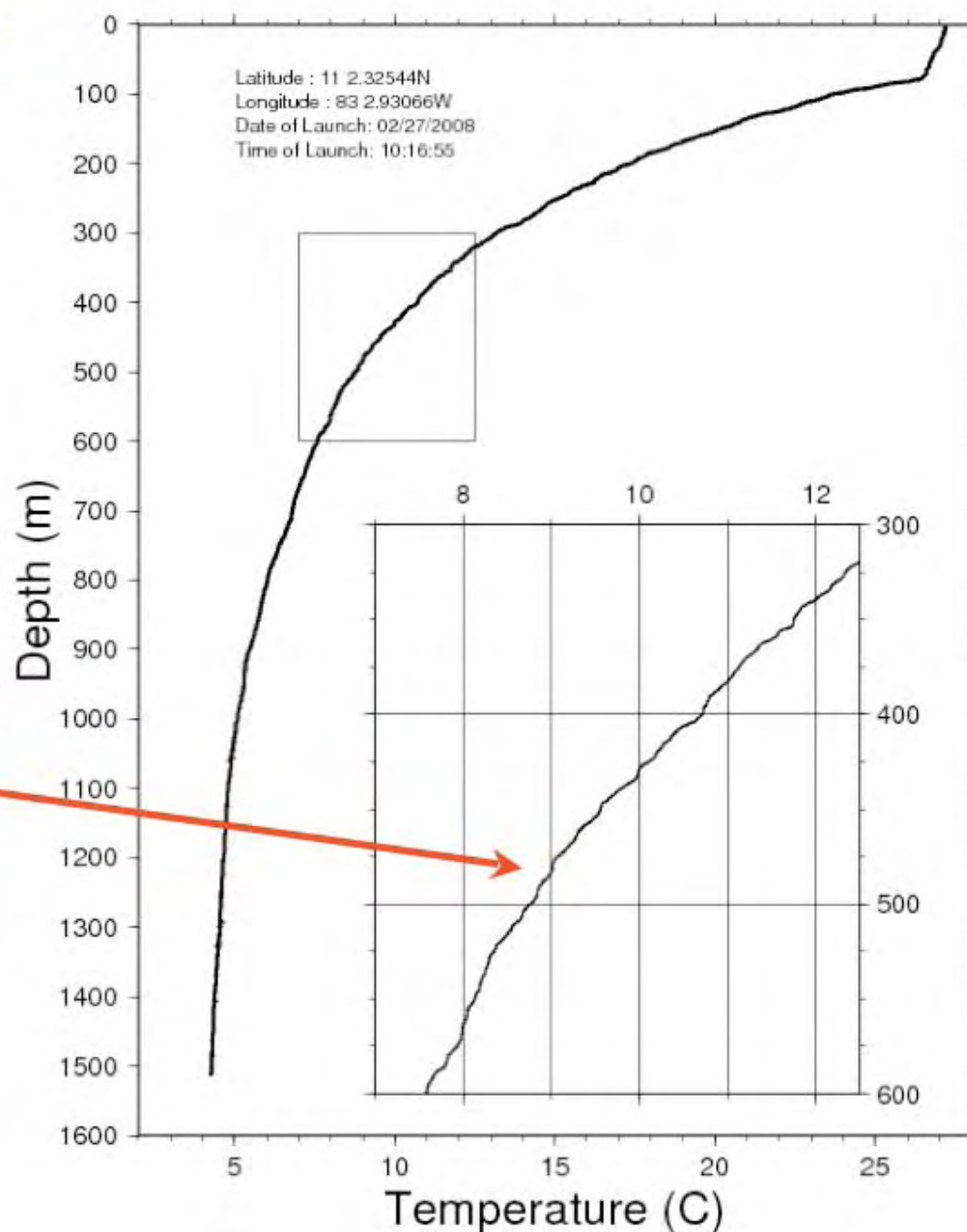
## Ocean Temperature Measurement and Imaging



## Sensitivity of Method

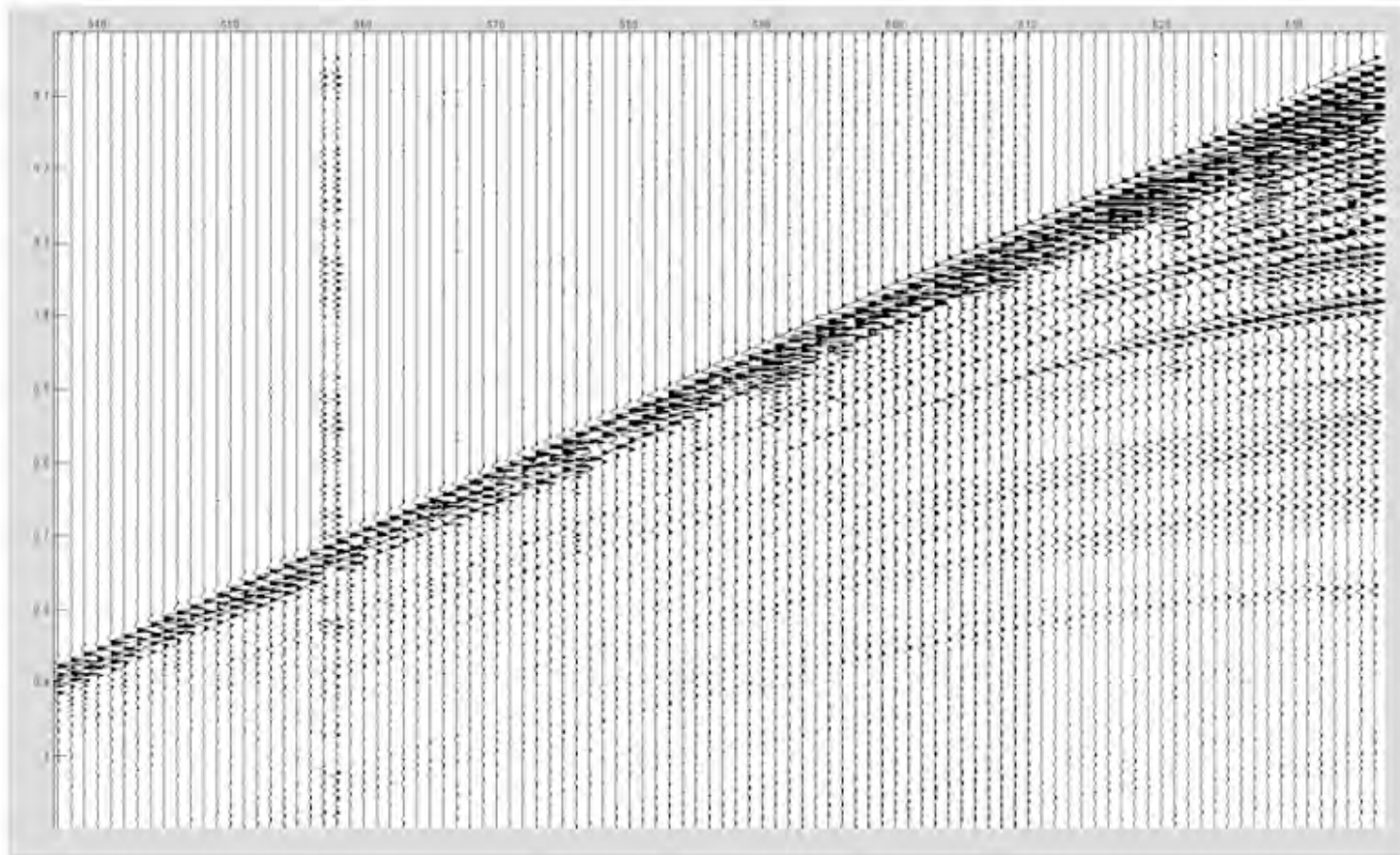
This is data from the currently ongoing maiden voyage of the R/V *Langseth*, in the Caribbean off Costa Rica.

Note how smooth the temperature profile is, with very subtle finestructure.

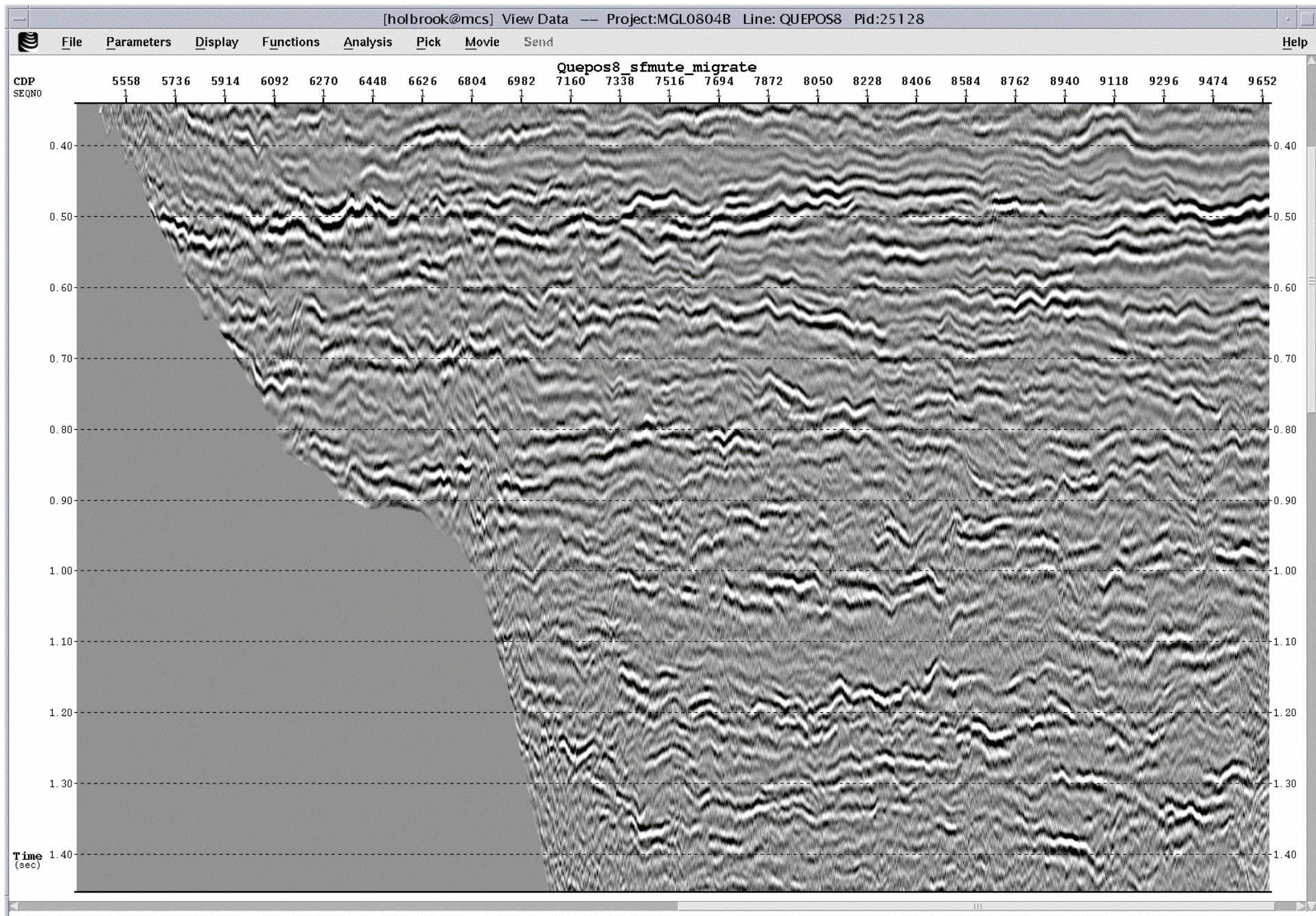




This shot gather, co-located with the XBT, shows very clear, high S/N reflections from even this subtle finestructure. (The secret here is a 36-gun, well tuned, linear gun array. Enjoying a calm sea state doesn't hurt either.)









## MGL0808 - McGuire EPR

- Airguns-only, 2 transects across TF's
- Airguns functioned well; high-quality data
- 16 of 17 OBS recovered
- Marine tech support "average", but high praise for S.O. Bern McKiernan ("off the chart" in effort); most significant problem was Unix support
- Problems with gravimeter, magnetometer
- Problems with Spectra/Digishot ("work in progress")





## Improvements since MGL0804

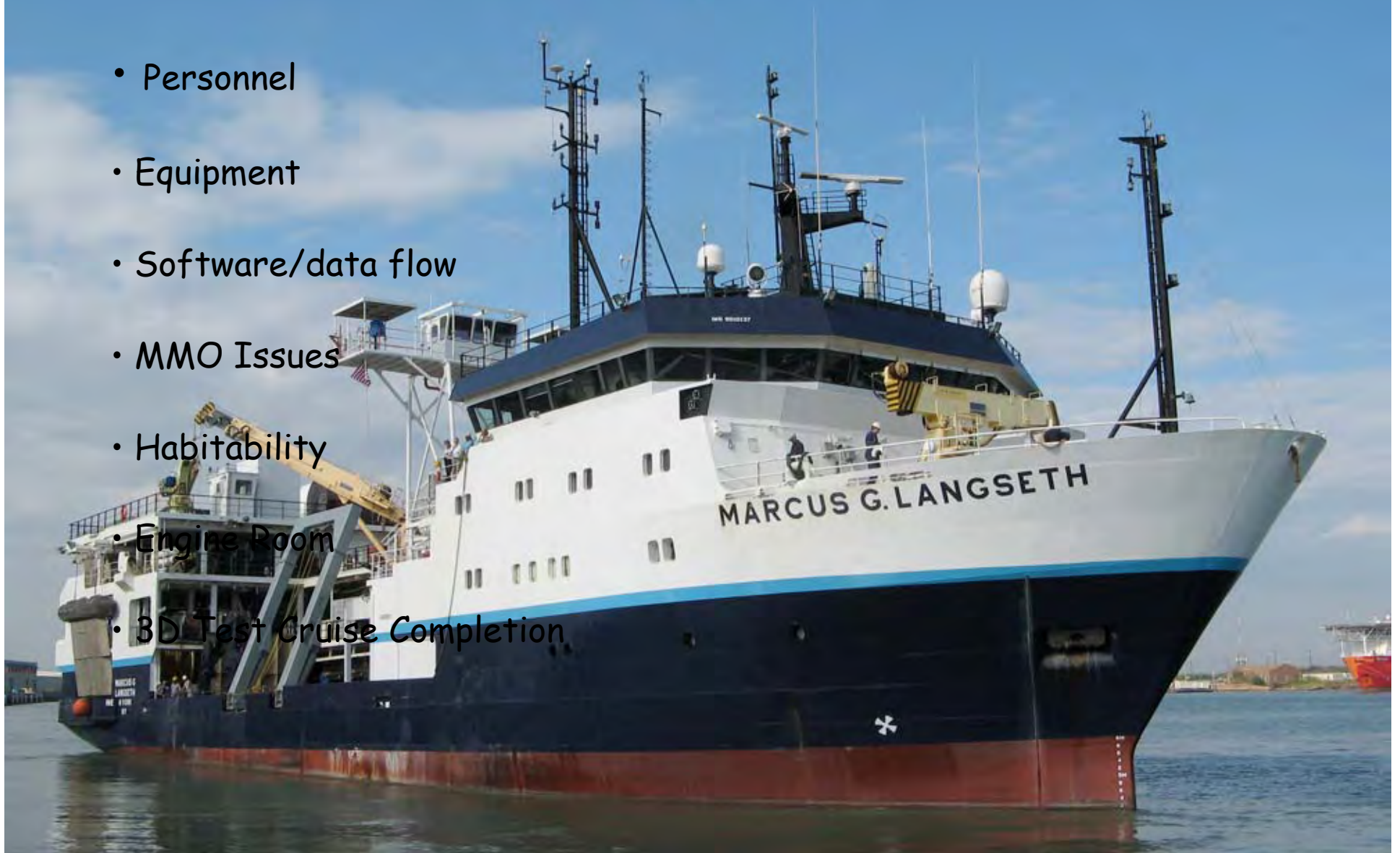
- PAM spare onboard (permanent?)
- New shot-time logger acquired and tested
- 2D towing arrangement refined & improved (float head of streamer)
- Additional gun tow ropes acquired for full suite of tow depths (3, 4.5, 6, and 9 m)
- Some progress in SEG-D → SEG-Y conversion (headers etc.)
- Shipboard website ("how-to") improved
- Real-time QC shot monitor installed





## Areas of Concern

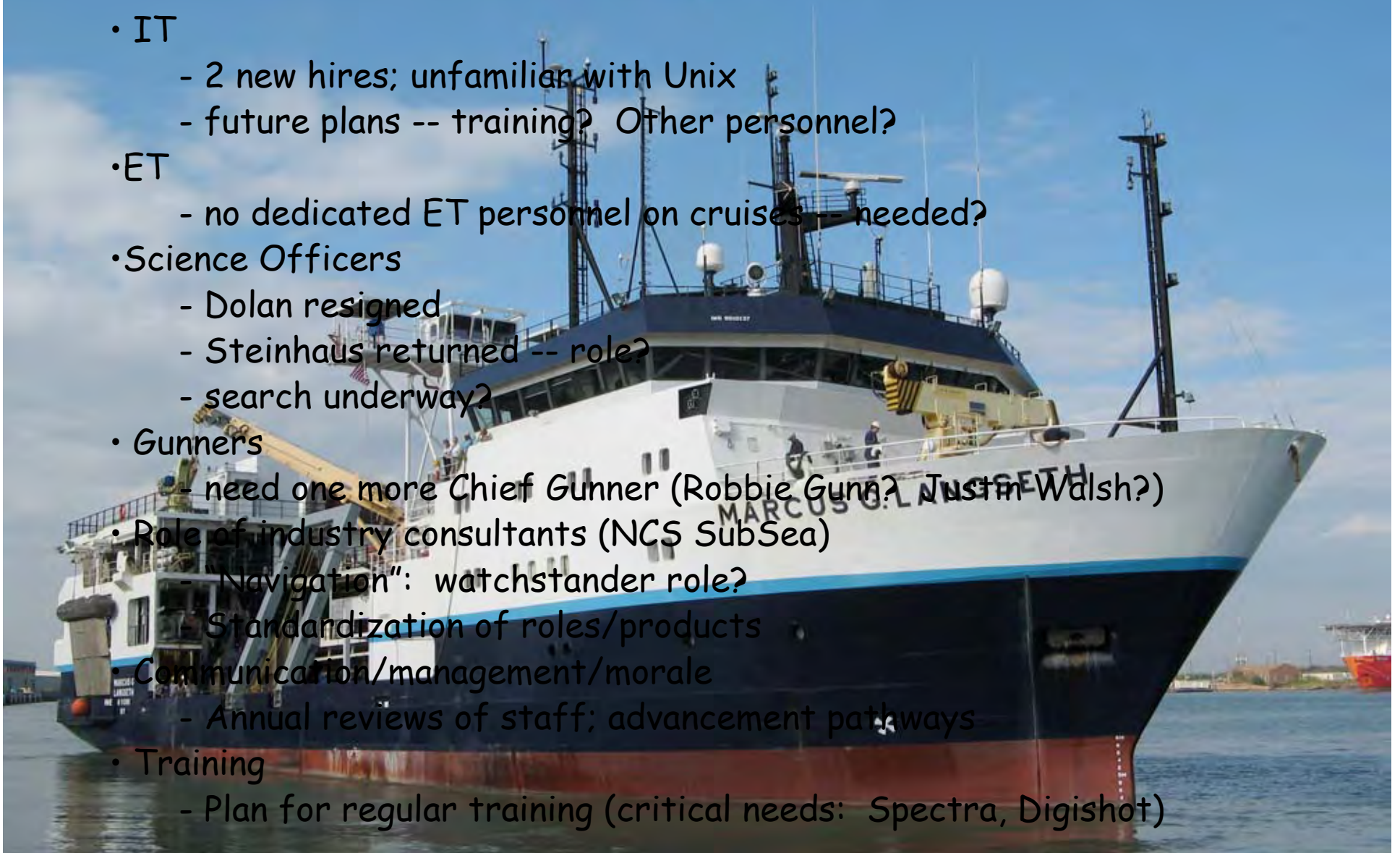
- Personnel
- Equipment
- Software/data flow
- MMO Issues
- Habitability
- Engine Room
- BD Test Cruise Completion





## Areas of Concern: Personnel

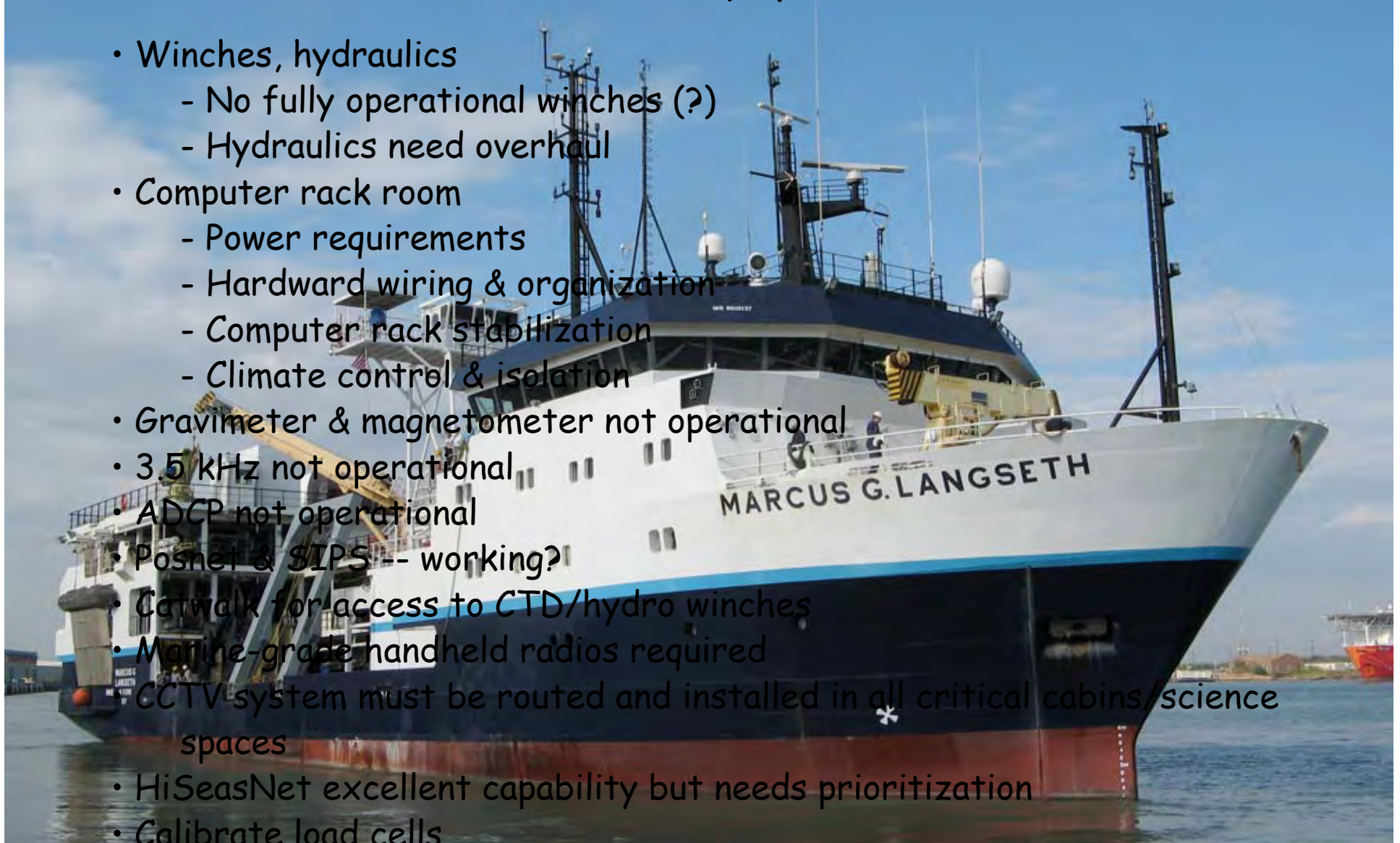
- IT
  - 2 new hires; unfamiliar with Unix
  - future plans -- training? Other personnel?
- ET
  - no dedicated ET personnel on cruises -- needed?
- Science Officers
  - Dolan resigned
  - Steinhaus returned -- role?
  - search underway?
- Gunners
  - need one more Chief Gunner (Robbie Gunn? Justin Walsh?)
- Role of industry consultants (NCS SubSea)
  - "Navigation": watchstander role?
  - Standardization of roles/products
- Communication/management/morale
  - Annual reviews of staff; advancement pathways
- Training
  - Plan for regular training (critical needs: Spectra, Digishot)





## Areas of Concern: Science Equipment

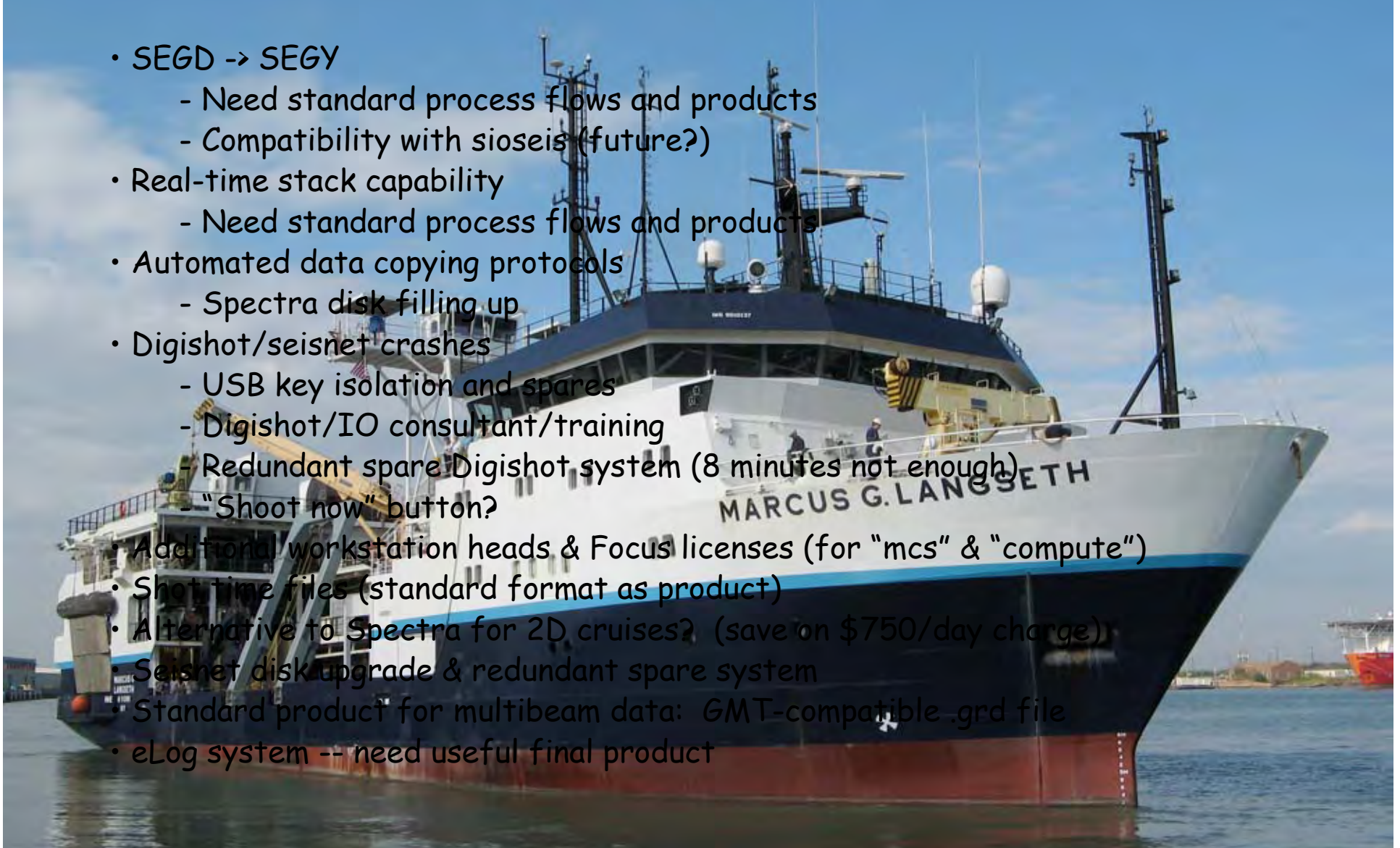
- Winches, hydraulics
  - No fully operational winches (?)
  - Hydraulics need overhaul
- Computer rack room
  - Power requirements
  - Hardware wiring & organization
  - Computer rack stabilization
  - Climate control & isolation
- Gravimeter & magnetometer not operational
- 3.5 kHz not operational
- ADCP not operational
- Posnet & SIPS -- working?
- Catwalk for access to CTD/hydro winches
- Marine-grade handheld radios required
- CCTV system must be routed and installed in all critical cabins/science spaces
- HiSeasNet excellent capability but needs prioritization
- Calibrate load cells





## Areas of Concern: Software/Data Flow

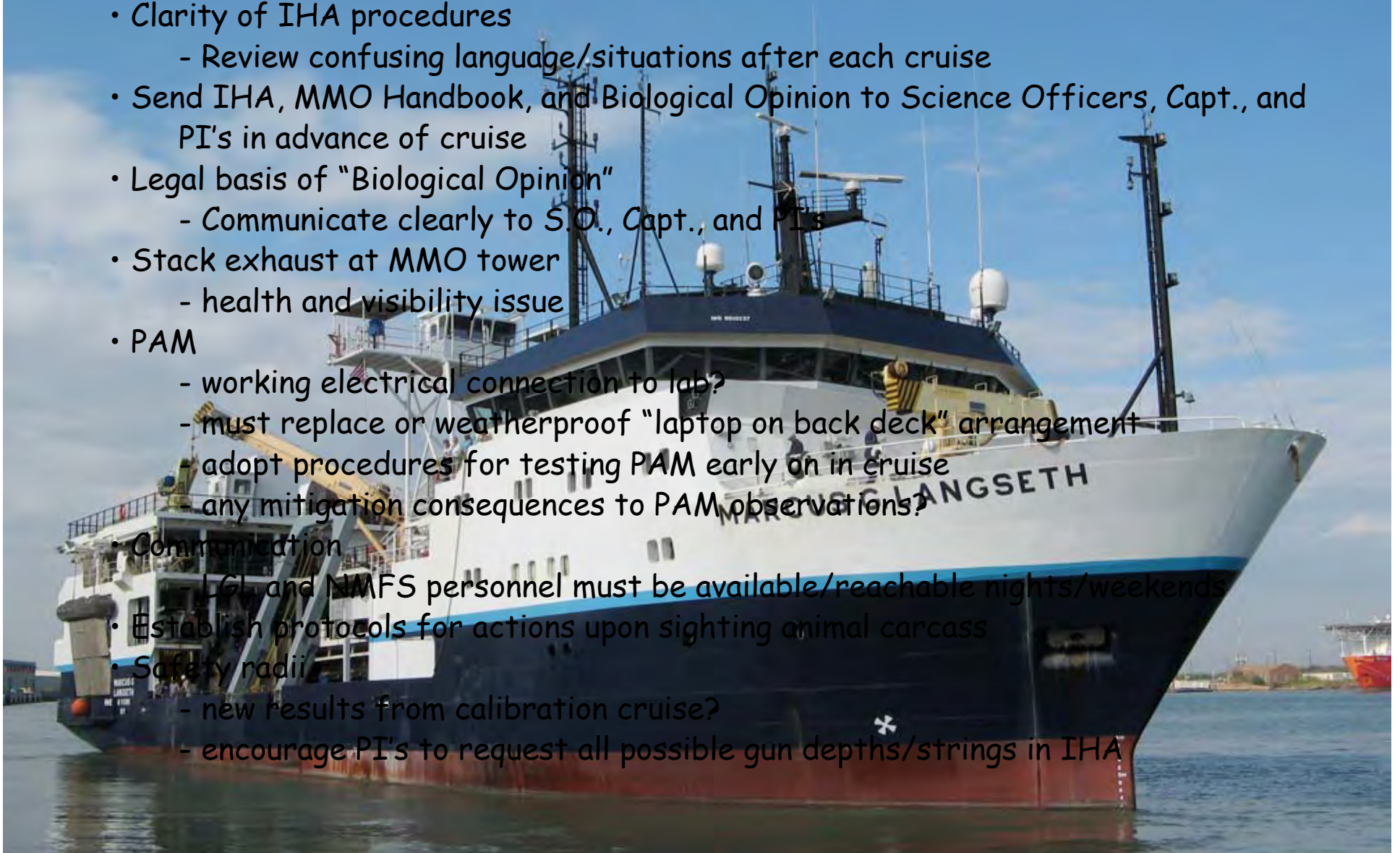
- SEGD -> SEG Y
  - Need standard process flows and products
  - Compatibility with sioseis (future?)
- Real-time stack capability
  - Need standard process flows and products
- Automated data copying protocols
  - Spectra disk filling up
- Digishot/seisnet crashes
  - USB key isolation and spares
  - Digishot/IO consultant/training
  - Redundant spare Digishot system (8 minutes not enough)
  - "Shoot now" button?
- Additional workstation heads & Focus licenses (for "mcs" & "compute")
- Shot time files (standard format as product)
- Alternative to Spectra for 2D cruises? (save on \$750/day charge)
- Seisnet disk upgrade & redundant spare system
- Standard product for multibeam data: GMT-compatible .grd file
- eLog system -- need useful final product





# Areas of Concern: MMO Issues

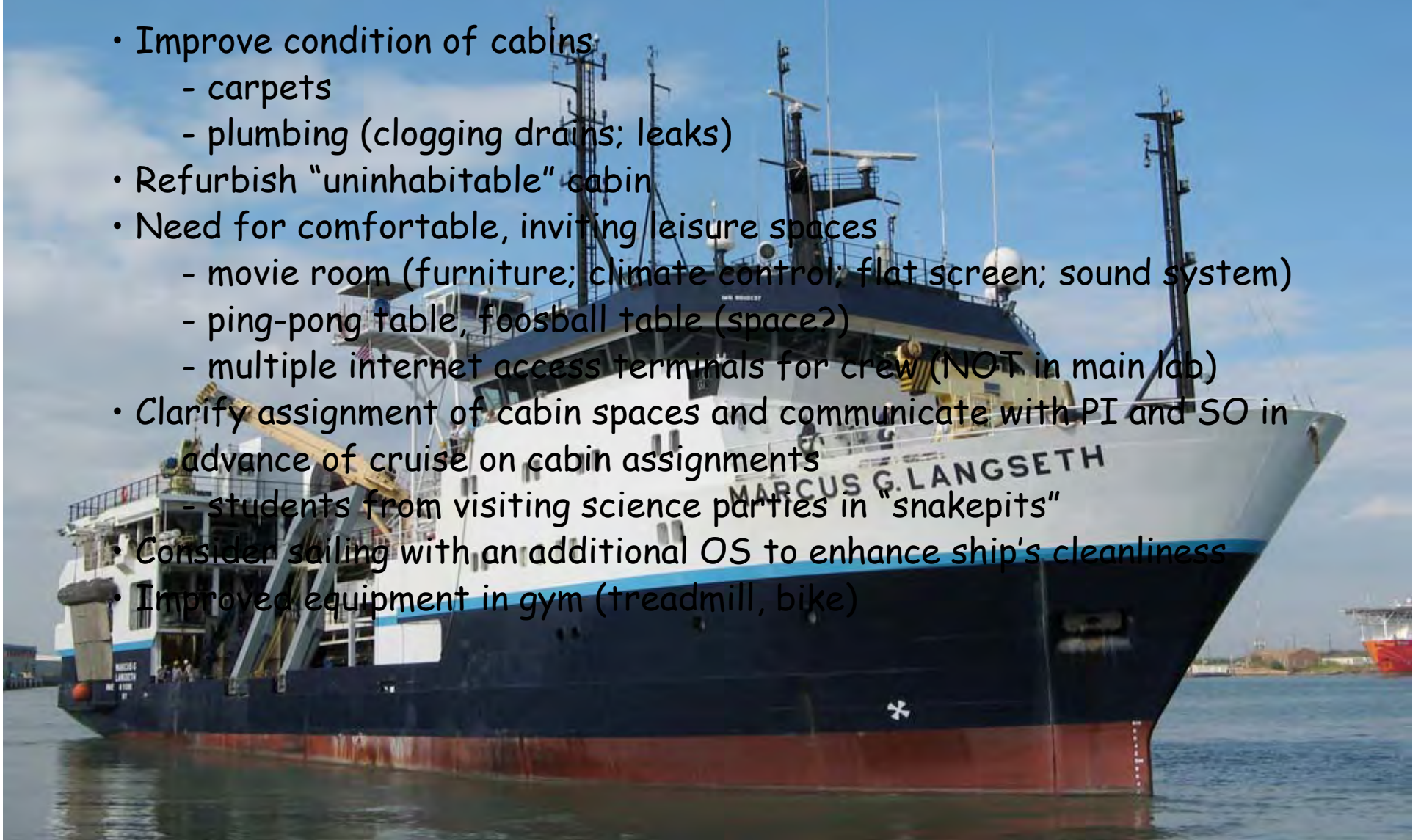
- Clarity of IHA procedures
  - Review confusing language/situations after each cruise
- Send IHA, MMO Handbook, and Biological Opinion to Science Officers, Capt., and PI's in advance of cruise
- Legal basis of "Biological Opinion"
  - Communicate clearly to S.O., Capt., and PI's
- Stack exhaust at MMO tower
  - health and visibility issue
- PAM
  - working electrical connection to lab?
  - must replace or weatherproof "laptop on back deck" arrangement
  - adopt procedures for testing PAM early on in cruise
  - any mitigation consequences to PAM observations?
- Communication
  - LGL and NMFS personnel must be available/reachable nights/weekends
- Establish protocols for actions upon sighting animal carcass
- Safety radii
  - new results from calibration cruise?
  - encourage PI's to request all possible gun depths/strings in IHA





## Areas of Concern: Habitability

- Improve condition of cabins
  - carpets
  - plumbing (clogging drains; leaks)
- Refurbish "uninhabitable" cabin
- Need for comfortable, inviting leisure spaces
  - movie room (furniture; climate control; flat screen; sound system)
  - ping-pong table, foosball table (space?)
  - multiple internet access terminals for crew (NOT in main lab)
- Clarify assignment of cabin spaces and communicate with PI and SO in advance of cruise on cabin assignments
  - students from visiting science parties in "snakepits"
- Consider sailing with an additional OS to enhance ship's cleanliness
- Improved equipment in gym (treadmill, bike)





## Areas of Concern: Engine Department

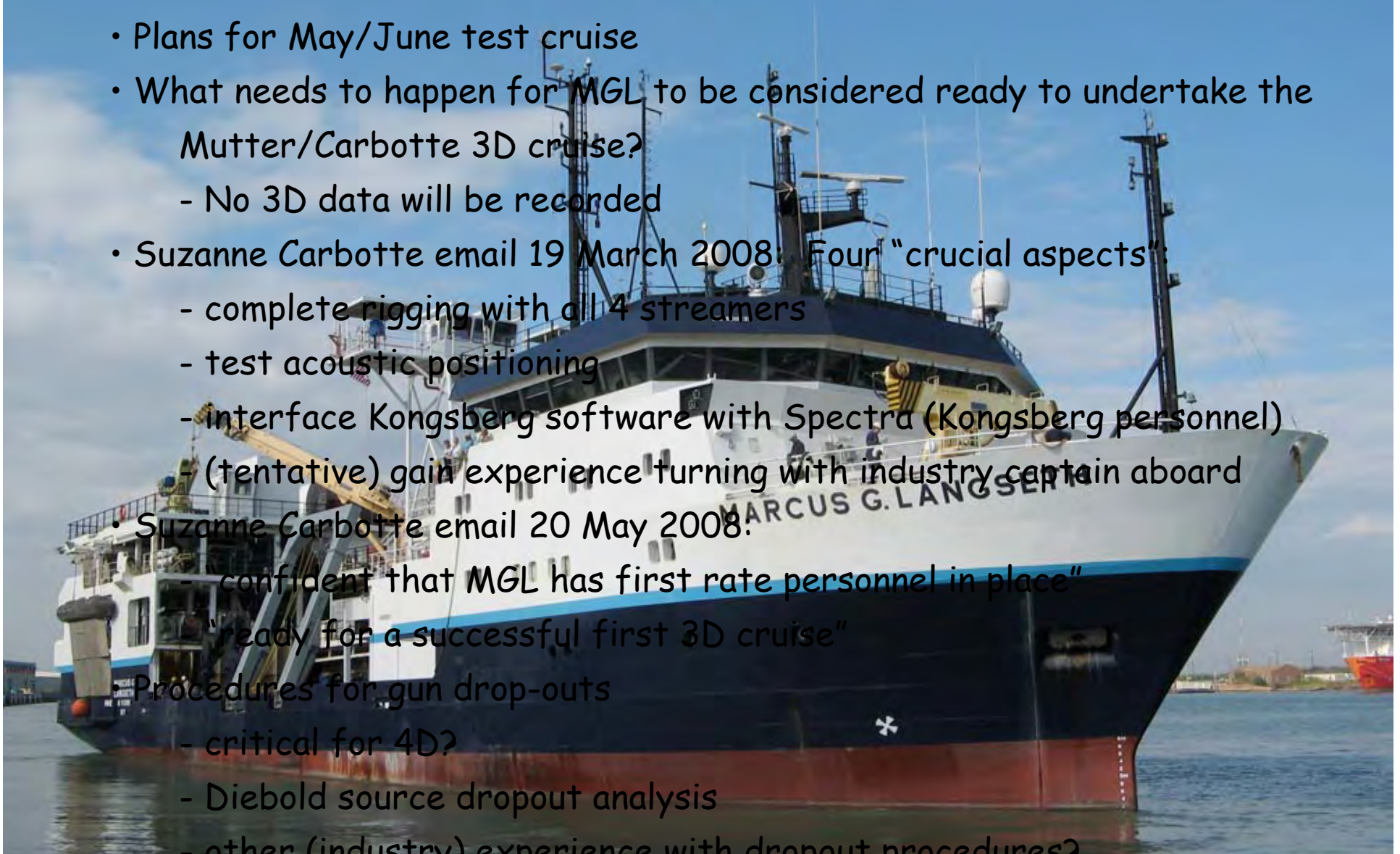
- Critical spares to keep both engines running
  - fuel pumps, etc.
  - critical for 3D cruise
- Policy on running two compressors
- Maintenance software for engine department -- working?
- Water
- Spares for compressors
- Climate control
- Other issues?





## Areas of Concern: 3D Test Cruise Completion

- Plans for May/June test cruise
- What needs to happen for MGL to be considered ready to undertake the Mutter/Carbotte 3D cruise?
  - No 3D data will be recorded
- Suzanne Carbotte email 19 March 2008: Four "crucial aspects":
  - complete rigging with all 4 streamers
  - test acoustic positioning
  - interface Kongsberg software with Spectra (Kongsberg personnel)
  - (tentative) gain experience turning with industry captain aboard
- Suzanne Carbotte email 20 May 2008:
  - "confident that MGL has first rate personnel in place"
  - "ready for a successful first 3D cruise"
- Procedures for gun drop-outs
  - critical for 4D?
  - Diebold source dropout analysis
  - other (industry) experience with dropout procedures?





# Miscellany

- Scheduling -- MLSOC role?
- How do we broaden funding base beyond NSF?
  - encourage/coordinate foreign collaborations/contracts
  - industry use?
- Streamer tension and 8 km streamer -- policy needed, or ad hoc?
- Seismic work boat -- get in working condition. Would be useful for, e.g., bird replacement and removal of fishing gear.





# MLSOC Business

- Rotation of membership
  - Staggered rotations beginning Oct. 2009
- Any subcommittees needed?
  - "Continuing Issues"
  - Data Flow
- EOS article?
- Adoption of Action Items for LDEO
- Web site:

User survey

Advice for PI's

