

**1. Please provide a BRIEF, 1-2 sentence description of the science objectives for this cruise (ie. CTD casts, survey transects, mooring deployment, etc.). Please specify how the service and support of the ship contributed to the factors that affected the completion of the science objectives, especially if not all of the objectives were met (ie. weather, equipment failure, etc.).**

The main purpose of our cruise was to study the organic matter that is put into the atmosphere as particles (also called aerosols) that are generated from bursting bubbles at the sea surface. To do this we deployed an aerosol generator to reproduce a model surface ocean using the ship's clean flow-through seawater system. We occupied four hydrographic stations--two biologically productive stations and two stations in the Sargasso Sea. To support the aerosol generator work, we conducted over fifty CTD casts to collect seawater and characterize the physical, chemical and biological properties of the water column.

All objectives were met. Amazingly, we lost no sea time either due to weather or equipment failure, other than one evening due to a gale, even though there were several hurricanes to our south. Our success was due in large part to the crew and captain who were courteous, flexible, and attentive to our needs. One of the best crews that I and my colleagues have ever sailed with.

As an aside, because it is not obvious where to put this comment, several members of the science party and the crew commented how it would be great if the old/broken universal gym was removed from the hold and replaced with either a new gym and/or a treadmill. For what it's worth, this simple act would go a long way in both de-cluttering the hold and boosting morale on longer cruises.

*\*\*\*Note: For the following questions please rate each of the following aspect of the cruise according to a scale of EXCELLENT to POOR. We do not require that you rate yourself. You may leave these sections blank, or you may make comments to provide feedback or explain situations encountered during the cruise.*

- *Excellent: Data quality outstanding, crew and techs performed at a superior level.*
- *Very Good: Crew and techs went out of their way to assist, all equipment operational, and calibrations current.*
- *Good: Crew and techs were mostly cooperative and helpful.*
- *Fair: No major conflicts between scientists and crew/techs, mediocre support.*
- *Poor: Crew and or techs poorly trained or uncooperative, ship poorly outfitted.*

*Provide specific comments to support your ratings, be sure to include suggestions for improvement in the future, and positive feedback when something is well done. The goal of this section is to answer "were you pleased with the service and support provided?"\*\*\*\**

**2. Rate how well the science party contributed to achieving the scientific objectives of this cruise (pre-cruise planning, communication, adequate personnel, equipment, attention to safety, organization, etc.).**

**Excellent** science party. All co-PIs and graduate students performed exceptionally well at sea. All personnel were well-prepared prior to and during the cruise. Communication among the scientists and the technician, attention to safety at all times, and organization during experiments were **excellent**, as evidenced by our enduring productivity and high morale throughout the entirety of the cruise.

**3. Rate how well ship operator pre-cruise activities (planning, coordination, and logistics) and shore support contributed to achieving the scientific objectives of this cruise.**

Communication among the chief scientist, the co-PIs and the shore personnel before the cruise, during the cruise and during demobilization was **excellent**. There were no critical setbacks

before or during the cruise. Our requests were met in a timely manner, crew were available to assist in mobilization and demobilization of equipment, shipping containers, and personnel. The crew and shore staff did an outstanding job overall.

***4. Rate how well the ship operator supplied scientific equipment and marine technicians supported this cruise (appropriate equipment, equipment operational and ready for cruise, calibrations, documentation, technicians trained and familiar with equipment).***

The ship operator, and the shore-based and on board marine technicians were excellent. In particular, I would like to single out my praise for the marine tech during the cruise. He was extremely competent, friendly, and ever helpful in every way from computer/electronics problems and requests to ship-related requests and problem solving. In my opinion and that of my co-PIs, he is one of the best techs we have ever worked with!

***5. Rate how well the scheduling of this cruise supported achieving the scientific objectives of this cruise (appropriate ship, year, season & dates, communications regarding schedules, online systems and scheduling process).***

The timing of the cruise was not optimal, although there was ample communication between the chief scientist and the Director of Marine Operations, Tom Glennon, regarding cruise dates well in advance of the cruise. I do appreciate his efforts to try and schedule our cruise during the late summer. Unfortunately, there were too many scheduling conflicts to allow this to happen. The timing of our cruise was not optimal because it affected our research plan to study the effect of UV solar radiation on aerosol production, which required a summer deployment.

***6. Rate the level of safety in shipboard and science operations (safety briefing and instructions, procedures & equipment).***

The scientific personnel were briefed on safe equipment usage, hazardous chemical usage and storage, ship safety, and ship-emergency protocols at the beginning of the research cruise.

***7. Rate how well the officers and crew and the manner in which the research vessel was operated contributed to achieving the scientific objectives of this cruise (communications, ship handling, deck procedures, attitude towards the science objectives, training, adequate number of crew, shipboard routine, etc.).***

The captain and crew were **excellent**. Without exception, they were respectful and courteous, and most importantly they operated the ship in a safe manner, while respecting the needs of the science party and our cruise objectives. The galley particularly stood out—the steward Mike Duffy, and his assistant Larry Bennett, went above and beyond in accommodating us both during meals and at all times in between. The food was perhaps the best we have ever had at sea. The science party looked forward to every meal, and the crew and science party intermingled a lot at meal time, which was welcome down time for us. Well done, and thank you, to all.

***8. Rate how well the research vessel and its installed equipment contributed to achieving the scientific objectives of this cruise (material condition, readiness, living conditions and habitability, condition of lab spaces, design, layout, deck equipment, winches, cranes, frames, propulsion, power, etc.).***

**Excellent**. All accommodations were more than adequate, none of our experiments were compromised due to inadequate equipment or personnel, and the labs were in very good

condition—that is, ready for our gear, easily customized for our experiments, and equipped with all necessary amenities. We should reiterate that virtually no time was lost due to weather. This achievement was not merely due to good fortune during hurricane season. Rather, it was due to the wisdom of the Captain and crew, and their superior command of the remarkably stable and reliable R/V Endeavor.

**9. Number of science days lost due to:**

<i>Weather:</i>	<input type="text" value="0.5 days"/>
<i>Ship, Ship's Propulsion, Power, Crew, etc:</i>	<input type="text"/>
<i>Ship's Scientific Equipment:</i>	<input type="text"/>
<i>User Provided Scientific Equipment:</i>	<input type="text"/>

**Please explain reasons for days lost. Sea conditions were too rough due to a gale to permit deck-board operations.**