Here is my proposed cruise plan:

(1) Melville departs as scheduled March 9 at 09:00.

(2) Recover Spray 026 starting at ~ 07:00 on March 10.

(3) Recover Spray 027 starting at ~ 15:00 on March 10.
(FYI: There is currently ~ 7 hrs transit between 026 and 027. Spray 027 is northbound so we should actually be able to get it a little closer to first light March 10).

(4) Return to Kaohsiung by morning of March 11. Ideal situation is two Seagliders currently stuck in Taipei airport will be at the pier for us to pick up and they we will depart again ASAP. Worse case is the two Seagliders remain held up somewhere through Tuesday. If so, revise plan. I will contact Troy Swanson of APL, Prof. Ruey Wei of National Sun Yat-Sen University and the ship's agent Jardine/Mr. Wang to be availble shore side to coordinate Seaglider delivery from NSYSU to the Melville.

(5) Afternoon of March 12 to sometime on March 14 will become our time for deploying the four new gliders (2 Sprays and 2 Seagliders). We should work towards deploying more than one glider on March 13, depending on how far south we want the deployment sites. Craig and Dan, please advise promptly on the deployment sites given the current plan.

(6) The Melville crew requires time to prepare fot the USCG inspection on March 17 and Capt. Curl would prefer to return to Kaohsiung by March 15. Returning on March 16 is considered a worse scenario.

Joe

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Cruise Plan Vessel: R/V MelvilleDates: 09-15 March 2008

This cruise is part of an ongoing ONR-funded program aimed atmeasuring the southern Kuroshio Current on seasonal timescales.Measurements are being made by autonomous gliding platformscalled gliders. These gliders are equipped with temperature,conductivity, pressure, and optical sensors. We will first recover twoSpray gliders which have been operating in the region since lateOctober 2007. Spray 027 will be recovered first and is currently at(20 degs. 34.95' N, 121 degs. 47.33' E). Spray 026 will be recoveredsecond and is currently at (19 degs. 00.22' N, 122 degs. 42.46' E). Recovery will be conducted via a small remote-controlled pickupboat kept near the ship. The recovery boat "scoops up" the gliders.No personnel will be onboard the pickup boat at any time. We willthen head south to deploy four gliders along a line stretchingthrough (17 degs. 07.00' N, 122 degs. 38.00' E) and (16 degs. 15.00' N, 124 degs. 00.00' E). Two deployed gliders will be Spraysfrom SIO and two will be Seagliders from the University ofWashington, Applied Physics Lab. The ship-mounted ADCPs,multibeam bathymetry system, and underway throughflow systemwill be operated while in Philippine or international waters. Thesemeasurements will not be made while in Taiwanese waters due to lack of clearance. Joe Martin,Chief Scientist

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Cruise Plan

Kuroshio intrusions into the South China Sea produce energetic mesoscale variability, generate near-inertial (and possiblynonlinear) internal waves and modulate existing internal waveactivity. Seasonally reversing monsoonal forcing exerts strongcontrols on both Kuroshio penetration and mesoscale evolution. Thus, communication with the adjoining open basin (in thisinstance, with the Pacific through its western boundary current) candramatically influence mesoscale and internal wave variability withinmarginal seas. The proposed effort focuses on

investigating thedynamics governing the Kuroshio pathway and its penetrationthrough Luzon Strait into the South China Sea, the mesoscaleresponse to both the intrusion and monsoonal forcing and, throughconnections with the Nonlinear Internal Waves Inititative (NLIWI) the resulting modulation of internal wave activity. This observational study exploits long-range gliders to conduct repeated sectionsacross the Kuroshio, following its path between the east coast ofLuzon and the northern tip of Taiwan.

This project will employ long-range, autonomous gliders to sample the Kuroshio along it's pathway. Gliders will be deployed from theR/V Melville off the east coast of Luzon (please see attached chart)and will make repeated sections across the Kuroshio as they arecarried downstream to the East Taiwan Channel.

Seagliders are small, reusable, long-range (3000 -4000 km)autonomous underwater vehicles designed to glide from the oceansurface to as deep as 1000 m and back while collecting profiles oftemperature, salinity, dissolved oxygen concentration and opticalproperties. Gliders steer through the water by controlling attitude(pitch and roll) and can thus navigate between waypoints to executesurvey patterns; or they hold station while profiling and collectEulerian time series as a 'virtual mooring'. Mission durations dependlargely on ambient stratification and profile depth, but for thisapplication should be approximately 6 months. Gliders arecommanded remotely and report their measurements via Iridiumsatellite telephone at the conclusion of each dive. The vehicles alsoarchive all data to onboard storage for delayed mode transmission or post-recovery interrogation. They use GPS navigation at the seasurface to dead reckon toward commanded targets by assimilation with a Kalman filter or though other algorithms. Navigation andknowledge of vehicle buoyancy and pitch angle allows estimation ofdepth-averaged current and suitably energetic vertical velocityfluctuations. Sensor suites include pressure, temperature,conductivity, Doppler sonar, dissolved oxygen, chlorophyllfluorometer, and optical backscatter. Gliders have been deployedand recovered from a wide range of platforms including smallrubber boats, chartered fishing vessels and large research ships.Because the vehicles are relatively small and light, special handlinggear is not required and field teams typically consist of one or, atmost, two individuals. In more remote regions, we have also hadsignificant success training local collaborators to handle field operations, eliminating the need to send highly-trained personnel from

our laboratories.

NOTE: March 2008 operations from Melville, others (June, Sep andpossibly Dec 2008) will be conducted from either Taiwaneseresearch vessel or chartered boat from Taiwan. Deployments wouldtake place within the Philippine EEZ, recoveries in Taiwanese EEZ.Would like to seek permission for gliders to sample within theJapanese EEZ (in the area marked on the chart), but should not needpermission for vessel operations.