

Open House

*AOML and the
Southeast Fisheries
Science Center
invite the public to
tour their science facilities
in celebration of
NOAA's 200th Anniversary*



Special features include:

- ◊ Hurricane Simulator
- ◊ Marine Touch Tank

*Friday, May 11th
9:00 a.m.—3:00 p.m.*

*Saturday, May 12th
10:00 a.m.—3:00 p.m.*

Contact Erica Rule for more info

305-361-4541

Erica.Rule@noaa.gov

Global Drifter 1250 Retrieved After Crossing North Atlantic

Global drifter 1250, the buoy that brought to fruition a ten-year international effort to establish a network of data-gathering drifting buoys distributed throughout the world's oceans, was successfully recovered off the coast of Brest, France on February 21, 2007. The buoy trekked across the North Atlantic Ocean following its deployment from the Tall Ship *Silva* near Halifax, Nova Scotia on September 18, 2005.

During the drifter's 521 days at sea, it transmitted sea surface temperature and barometric pressure data to the Argos satellite system and the Global Telecommunications System. In fact, its sensors were still operational when retrieved by the French Naval RMH *Tenace*.

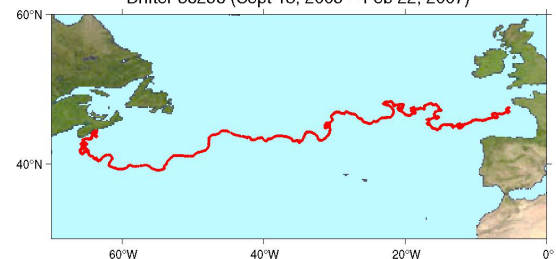
The launch of drifter 1250, hailed as a milestone by the international oceanographic and meteorological communities, marked the completion of the global drifter network, as well as completion of the first component of the Global Ocean Observing System (GOOS). The GOOS array is comprised of a number of inter-related observing systems that monitor the changing state of the ocean in near real-time. Although originally designed for climate purposes, the array also provides data in support of weather prediction, global and coastal ocean prediction, marine hazard warnings, marine environmental and ecosystem monitoring, naval applications, and many other non-climate uses.

The satellite-tracked global drifter network measures currents, sea surface temperatures, atmospheric pressure, winds, and salinity over the ocean. It also provides the primary calibration system, or "ground truth," for satellite measurements of sea surface temperature, an essential factor in climate, weather, and storm prediction.



Drifting buoy 1250 was recovered near Brest, France by the French Naval RMH *Tenace* on February 21, 2007. Pierre Blouch of Meteo France and Captain Jean-Claud Le Gall hold the drifter's transmitter, still operational after its 521 days at sea.

Drifter 36256 (Sept 18, 2005 – Feb 22, 2007)



Trajectory generated by AOML's Drifter Data Assembly Center of global drifter 1250 as it trekked across the North Atlantic Ocean from Halifax, Nova Scotia to the coastal waters of Brest, France.

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AOML Director Meets with Florida Law Makers

Bob Atlas visited Capitol Hill on March 28th to meet with AOML's district representative, Congresswoman Ileana Ros-Lehtinen. He also met with staff members from Senator Bill Nelson, Senator Mel Martinez, and Congresswoman Debbie Wasserman Schultz's offices.



Bob Atlas and Florida Congresswoman Ileana Ros-Lehtinen.

Atlas provided information on research conducted at AOML, including research to improve hurricane forecasts, the role of the oceans in climate change, and how humans impact the oceans, as well as the President's FY-08 budget request. He returned to the Hill on April 12th with other NOAA representatives to brief Senator Daniel K. Inouye's (Hawaii) staff on AOML's hurricane and oceanographic research.

Divers with AOML's Ocean Chemistry Division recovered an acoustic Doppler current profiler (ADCP) instrument in February from a south Florida coral reef. Temperature data recorded by the instrument agrees with data obtained from other ADCP instruments deployed in south Florida coastal waters that indicate the likely presence of both wind-induced and Gulf Stream dynamics-induced upwelling of deep, nutrient-rich ocean waters to the coral reefs offshore of Miami-Dade, Broward, and Palm Beach Counties. Deeper ocean water within three to four miles of the coast can serve as a potential source of nutrients to the reefs in southeast Florida. Studies aimed at examining the impacts of many potential nutrient sources to Florida's coastal reefs are planned and will be conducted by scientists with the Division's Florida Area Coastal Environment (FACE) program.

(continued from page 1)

Scientific design of the global drifting buoy network called for 1,250 buoys to be deployed and maintained worldwide. This figure was derived by dividing the global ocean into a 500 x 500 nautical mile grid. By doing so, 1,250 buoys were needed, or one buoy every 500 nautical miles, to ensure total coverage of the global ocean and to calibrate the satellites.

AOML contributes to the Global Drifter Program through the activities of its Drifter Operations Center and the Drifter Data Assembly Center, both housed within AOML's Physical Oceanography Division. The Drifter Operations Center manages global drifter deployments using research and volunteer observing ships and aircraft. The Drifter Data Assembly Center verifies that the drifters are operational and distributes the data to meteorological services via the Global Telecommunications System. It also assembles, quality controls, and makes the data available on the World-Wide Web and provides drifter-derived products.

In the coming months, drifter 1250 will be hosted and on display at various laboratories and institutions around the world to celebrate the buoy that successfully fulfilled a 10-year international quest to implement a sustained ocean monitoring network.



Amidst celebration, Drs. Michael Johnson of NOAA's Office of Climate Observation and Peter Niiler of the Scripps Institution of Oceanography dispatched global drifter 1250 into the cool coastal waters off Halifax, Nova Scotia in September 2005. Drifter 1250 marked the completion of the global drifter network, an international effort 10 years in the making.

Efforts to Monitor North Atlantic Circulation Continue

Scientists with AOML's Physical Oceanography Division (PhOD) participated in a research cruise aboard the NOAA Ship *Ronald H. Brown* in late March as part of an ongoing effort to monitor ocean currents in the North Atlantic that propel the meridional overturning circulation (MOC) system. They were joined aboard the *Brown* by researchers with Texas A&M University and the University of Miami, as well as researchers with the United Kingdom's National Oceanography Centre and Southampton University. Dr. Molly Baringer of PhOD served as the chief scientist.

The MOC transports warm water from the tropics to the far northern latitudes where it is chilled by cool air and subsequently sinks to great depths.

The cold, deep water then returns southward toward the equator. Climate models and paleoclimate observations have demonstrated a strong correlation between changes in the MOC and global climate variability. The models also suggest that the Atlantic portion of the MOC and the associated oceanic heat flux varies considerably on interannual time scales. In addition to abrupt climate change scenarios where the MOC could virtually shut off, the "normal" variations may range from 20-30% of its long-term mean value.

The *Brown* departed Charleston, South Carolina on March 21st and cruised to the Florida Straits where efforts to monitor the MOC began. During their three weeks at sea, scientists serviced the moorings in place along 26.5°N. The *Brown* then trekked eastward where moorings east of the Bahamas were recovered and redeployed. A suite of chlorofluorocarbon and hydrographic measurements was collected at 74 stations.

The cruise ended in San Juan, Puerto Rico in mid-April. It was jointly sponsored by the international, interdisciplinary Rapid Climate Change (RAPID) and Climate Variability and Predictability (CLIVAR) programs, both of which aim to improve climate predictive capability.



Data from five pressure inverted echo sounder (PIES) instruments were acoustically downloaded during the cruise for processing at AOML.

AOML Nominee Selected as NOAA Environmental Hero

Dr. Jill Wright of the Institute for Shipboard Education has been named a 2007 Environmental Hero by NOAA. Wright was nominated for the honor by AOML for her dedication, enthusiasm, and collaboration in support of NOAA's global ocean observing system for climate and weather forecasts.

During the spring of 2005, Wright played a crucial role in establishing a collaboration with AOML's Physical Oceanography Division (PhOD) to deploy surface drifters and profiling floats from the M/V *Explorer*, which serves as a platform for the educational Semester At Sea Program, a component of the Institute.

Additionally, Wright and the Institute have recently agreed to augment their current collaboration with NOAA/AOML by allowing PhOD scientists to install permanent oceanographic instruments aboard the *Explorer*. These instruments and the data they gather support future NOAA and NASA ocean satellite missions and are critical to the ongoing investigation of dissolved CO₂ in the ocean.

Students Track Drifters via Adopt-A-Drifter Web Page

Rick Lumpkin, Craig Engler, and Shaun Dolk of AOML's Physical Oceanography Division deployed four satellite-tracked surface drifters on March 18th that will be closely monitored by children in several Miami-area classrooms. The drifters, which measure sea surface temperature and currents, were deployed in the Florida Straits from a trimaran operated by Shake-A-Leg Miami. The non-profit educational and recreational organization provides services and programs that enhance the independence, employment potential, and quality of life for handicapped individuals and underprivileged youth.

Students at the Frances S. Tucker, Eneida M. Hartner, and Frederick Douglass elementary schools in Miami assisted in the deployments and will track the drifters' progress on NOAA's Adopt-A-Drifter web page (www.adp.noaa.gov). These deployments and an overview of the Global Drifter program presented by AOML oceanographer Rick Lumpkin were filmed for the *Aqua Kids* television program for children.

Collaboration Enhances Global Ocean Data Collection Efforts

The close collaboration between AOML and the University of Virginia-sponsored Semester At Sea Program will be strengthened this summer with the installation of a thermosalinograph (TSG) instrument aboard the M/V *Explorer*. Administrators of the program and Dr. Silvia Garzoli, Director of AOML's Physical Oceanography Division, reached an agreement to install the TSG this past February. The *Explorer* serves as a floating university for more than 700 undergraduate students every semester and sails around the world twice a year. With the installation of a TSG, the *Explorer* will become a new member of NOAA's Ship of Opportunity Program in support of global data collection efforts.

The TSG is a simple instrument that will be mounted close to the ship's water intake and will measure the sea surface temperature and salinity along its track. The instrument is automatically operated, easy to maintain, and can transmit data in real time. During the *Explorer's* recent transect between the cities of Salvador, Brazil and Cape Town, South Africa, Dr. Gustavo Goni of the Physical Oceanography Division coordinated details of the installation with the ship's engineers and crew members. Derrick Snowden of the Physical Oceanography Division will perform the TSG installation in June while the ship is docked in San Diego, California before the start of its summer voyage.

Once the TSG is installed, sea surface temperature and salinity data will be transmitted in real time to AOML for immediate quality control and retransmission to the Global Telecommunications System, the real-time global data base of oceanic and atmospheric observations used to initialize weather and climate models. These data will also be of extreme value to the oceanographic community, as they will serve to detect strong salinity gradients in frontal regions, improve the mean salinity fields, study trends and variability in the transects repeated by the ship, and contribute to the validation and calibration of upcoming satellite salinity missions. Additionally, a web page will be designed for students and faculty members to observe the oceanic and atmospheric conditions in the region where the ship is sailing, including the observations obtained by the onboard TSG.

Several oceanographers from the Physical Oceanography Division have participated in the *Explorer's* voyages since 2005 to deploy surface drifters and floats in regions that are severely undersampled. While aboard ship, they've presented lectures and training about these instruments and the procedures used to deploy them.

The collaboration between AOML and the Semester at Sea program will be further augmented in 2008 with the onboard installation of a pCO₂ system which measures carbon dioxide levels in ocean surface water.



The M/V *Explorer*, pictured at dock in Cape Town, South Africa, joins NOAA's Ship of Opportunity program in June 2007 with the onboard installation of a thermosalinograph instrument.



Dr. Gustavo Goni of AOML's Physical Oceanography Division in front of the M/V *Explorer*.



Dr. Harris B. Stewart, founder and first director of AOML, is noted on NOAA's 200th anniversary web site as one of 16 individuals recognized for their outstanding contributions to NOAA. A short biography about Stewart can be viewed on NOAA's "Top Ten History Makers: Honorable Mentions" web page at:

http://celebrating200years.noaa.gov/historymakers/side_hon_mentions.html

NOAA R/V *Cable* Officially Joins AOML Fleet

The NOAA R/V *Cable* officially became the newest addition to AOML's fleet of research vessels on February 21, 2007 after passing an inspection performed by a local marine survey and inspection firm. The small boat was recently renovated by Joseph Bishop, LT Hector Casanova, and Terrell Jones of AOML's Ocean Chemistry Division.



Joe Bishop (standing) and Terrell Jones (seated) of AOML's Ocean Chemistry Division show off the new NOAA R/V *Cable*.

The *Cable* is a 17-foot Parker boat with a central control console and a T-top. It is equipped with batteries for operation of scientific instruments, as well as modern GPS navigation, a depth finder, and a 200-horsepower Yamaha outboard engine. The *Cable's* draft is about 1 foot, while its top speeds reach about 28 knots.

With accommodations for a crew of up to four, the *Cable* will be used in support of research efforts to tow a sonar system, obtain seawater samples, and serve as a platform for dive operations.

AOML's Physical Oceanography Division conducts quarterly high-density XBT (expendable bathythermograph) cruises from aboard commercial container ships to measure the upper ocean thermal structure of the North and South Atlantic Oceans. XBTs are deployed every $\frac{1}{2}$ – $1\frac{1}{2}$ hours depending on the ship's speed, along with surface drifting buoys and Argo profiling floats. The following cruises were completed in March–April 2007:

- AX-7: Mediterranean to Miami, Florida
- AX-8: Cape Town, South Africa to Newark, New Jersey
- AX-10: Newark, New Jersey to San Juan, Puerto Rico
- AX-18: Cape Town, South Africa to Buenos Aires, Argentina

NOAA Strengthens its Regional Collaborative Networks

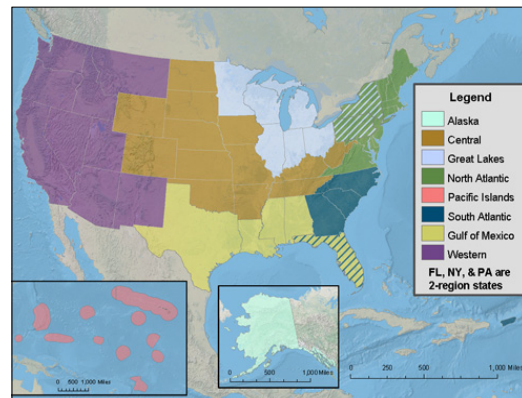
NOAA is strengthening its coordination and communication efforts by placing greater emphasis upon regional collaborations. An Executive Oversight Group comprised of senior managers has been created to provide leadership and direction for the undertaking.

The Group has defined eight geographic areas to be represented by regional teams that will coordinate NOAA's activities. They are: Alaska, Central, Great Lakes, Gulf of Mexico, North Atlantic, Pacific Islands, Southeast and Caribbean, and Western. "Border" states such as Florida, New York, and Pennsylvania are included in more than one region.

AOML Director Dr. Robert Atlas is currently serving as a member on three of the regional teams (Gulf of Mexico, North Atlantic, and Southeast and Caribbean including Puerto Rico and the U.S. Virgin Islands). AOML senior staff are also serving as team members for the Gulf of Mexico (David Palmer), North Atlantic (Molly Baringer), and Southeast and Caribbean (Judy Gray) regions. The eight regional teams have been called upon to comment on the annual guidance memorandum for how NOAA will structure its 2010-2014 budget request and similar important NOAA decision-making processes.

The regional teams are further supported by cross-regional task teams focused on the following priority areas: (1) Integrated Ecosystem Assessments, led by Steve Murawski; (2) Integrated Water Resource Services, led by Gary Carter (David Palmer is a team member); (3) Hazard Resilient Coastal Communities, led by Margaret Davidson (Judy Gray is a team member); and (4) Outreach and Communications, led by Louisa Koch.

The overall goal of NOAA's regional collaboration effort is to develop an approach that better aligns and integrates agency performance with regard to the four pilot topics. Please speak with an AOML team representative if you have any questions or suggestions. Information about this effort can be accessed by visiting the NOAA Regional Collaboration web site at www.ppi.noaa.gov/regional_collaboration.htm.



Eight regional areas for collaboration have been delineated by NOAA's Executive Oversight Group.

Gulf of Mexico Regional Team Gathers for First Meeting

The first meeting of the NOAA Gulf of Mexico Regional Collaboration Team took place on April 2, 2007 at the Port of New Orleans. Regional collaboration is a new NOAA-wide effort to connect and mobilize NOAA assets in a region to enhance customer services and improve responsiveness to stakeholders. The effort also seeks to enable NOAA researchers to more effectively and efficiently work amongst themselves and their partners and to implement activities in support of national and regional priorities.



The Gulf of Mexico Regional Collaboration Team had their first meeting in Louisiana at the Port of New Orleans.

The meeting was convened to define near-term tasks in each of the four NOAA priority areas: integrated ecosystem assessments; integrated water resource services; hazard resilient coastal communities; and outreach and communications. The Team consists of representatives from all of NOAA's Line Offices under the leadership of Dr. "Buck" Sutter, the National Marine Fisheries Service Southeast Deputy Regional Administrator. Drs. Bob Atlas and David Palmer are AOML team representatives. The meeting was hosted by Mr. Chris Bonura, Port Communications Manager.

Farewell

Craig Engler, a physical scientist with AOML's Physical Oceanography Division, resigned in March after nine years of employment with the Division to move with his wife to Seattle, Washington where he'll pursue a Master's of Public Administration degree at the University of Washington. Engler began his affiliation with AOML in 1993 as a high school summer intern. He became a full-time federal employee in 1998. During Engler's years with the Division, he served as the manager of the Drifter Operations Center, which oversees the global deployment of Argos-tracked drifting buoys in support of climate monitoring and research.



Welcome Aboard

Dr. Shenfu Dong, a CIMAS assistant scientist, joined the staff of the Physical Oceanography Division in March. Dong received a Ph.D. from the University of Washington's School of Oceanography/Applied Physics Laboratory in 2004. Prior to her arrival at AOML, she completed a post-doctoral scholar position at the Scripps Institution of Oceanography in La Jolla, California.

Kyle Seaton, a CIMAS research associate, joined the staff of the Physical Oceanography Division in March to assist with the design and development of new systems and instruments for use by the Division in support of its field research programs. He will also assist in maintaining and upgrading existing systems and instruments, as well as participate in cruises aboard oceanographic vessels and merchant ships to collect scientific data. Seaton has a B.S. degree in electrical engineering from Georgia Institute of Technology.

Sandra St. Hilaire, a CIMAS casual worker, joined the staff of the Physical Oceanography Division in March to work with the Division's Argo Group in monitoring the Argo operations system, as well as assist with the validation of Argo data and maintenance of meta data. St. Hilaire is an undergraduate student at the University of Miami's Rosenstiel School pursuing both a bachelor and master's degree in marine affairs and policy.

Congratulations

Howard Friedman, Deputy Director of AOML's Hurricane Research Division, is the recipient of a 2006 NOAA Distinguished Career Award. Friedman was recognized "for providing guidance and career mentoring to NOAA scientists, from the youngest interns to seasoned researchers, and for contributions to NOAA's work environment through dedication to equal employment opportunity and mediation programs." A 46-year NOAA employee, Friedman is currently the Director of AOML's Office of Equal Employment Opportunity (EEO), a former member of the NOAA EEO Council, past chairperson of the American Meteorological Society's (AMS) Board on School and Popular Meteorological and Oceanographic Education, and the AMS' Board on Women and Minorities. Friedman is also a founding member and co-chair of the South Florida Federal Executive Board's (FEB) Interagency Mediation Council, an active member of the FEB's Shared Neutral Alternative Dispute Resolution Program, and a mediator for NOAA's Alternative Dispute Resolution program.



Shirley Murillo, a research meteorologist with AOML's Hurricane Research Division, has been named NOAA's March 2007 Employee of the Month. Murillo was recognized for her research on the boundary layer wind structure of landfalling tropical cyclones which includes the real-time surface wind analyses she performs. These analyses generate wind field products that are available to the National Hurricane Center, Federal Emergency Management Agency, and emergency managers. Murillo's research also entails working with a Doppler radar wind retrieval scheme that deduces the primary circulation of landfalling hurricanes. This technique provides information about the inner core wind structure of tropical cyclones as they approach land.



Erica Rule, AOML's outreach coordinator, was "tapped" to become a member of the University of Miami's Iron Arrow Honor Society on March 26th. The Iron Arrow Honor Society was founded in 1926 in conjunction with the University's opening. Induction into the Society is considered the highest honor attainable at the University of Miami. Based on Seminole Indian tradition, the Society recognizes those individuals in the University of Miami community who exemplify the five qualities of Iron Arrow: love of alma mater, character, leadership, scholarship, and humility. As per tradition, Rule was required to wear her colorful Miccosukee Indian made jacket until initiation was completed in Mid-April.



Derrick Snowden, an oceanographer with AOML's Physical Oceanography Division, is the recipient of a 2006 U.S. Department of Commerce Bronze Medal for his "voluntary service provided during FEMA post-disaster relief operations after multiple hurricane strikes in 2005." Snowden spent three weeks in Beaumont, Texas following the landfall of Hurricane Rita where he assisted residents apply for government aid and helped them navigate the bureaucratic process involved in doing so. He also spent a week in Houston, Texas assisting victims of both Hurricanes Katrina and Rita who had been evacuated from their communities. Snowden helped assess the work skills of displaced individuals and connect them with local jobs.



The restoration of Virginia Key Beach Park located behind the AOML facility is generating an increased volume of traffic on Virginia Beach Drive. Please remember to stop fully and look to the left before exiting the AOML parking lot.

Travel

Peter Black, Jason Dunion, John Gamache, John Kaplan, Frank Marks, and Shirley Murillo attended the 61st Interdepartmental Hurricane Conference in New Orleans, Louisiana on March 5-9, 2007.

Silvia Garzoli attended an Argo Steering Team meeting in Paris, France on March 7-9, 2007.

Bob Atlas and Peter Black attended a HiRAD meeting at the University of Central Florida in Orlando, Florida on March 8-9, 2007.

Gustavo Goni attended the 2007 Ocean Surface Topography Science Team meeting in Hobart, Australia on March 12-15, 2007.

Peter Black was an invited lecturer at the World Meteorological Organization's International Training Workshop on Tropical Cyclone Disaster Reduction in Guangzhou, China on March 26-31, 2007.

Jason Dunion attended the AIRS (Atmospheric Infrared Sounder) Science Team meeting in Pasadena, California on March 27-30, 2007.

Bob Atlas visited Florida congressional and senatorial offices on Capitol Hill in Washington, D.C. to brief officials about AOML research on March 28, 2007. He returned to Capitol Hill to brief Senator Inoué's staff on April 11, 2007.

David Palmer attended the Gulf of Mexico Region Collaborative Team meeting in New Orleans, Louisiana on April 2, 2007.

Rik Wanninkhof attended the North Atlantic Subpolar Gyre Workshop in Kiel, Germany on March 19-21, 2007. He was also the keynote speaker at the Ocean Surface CO₂ Variability and Vulnerabilities Workshop in Paris, France on April 11-14, 2007.

Christopher Meinen attended the 2007 General Assembly meeting of the European Geosciences Union in Vienna, Austria on April 15-20, 2007.

Gustavo Goni and Derrick Snowden attended a Ship of Opportunity Program Implementation Panel (SOOPIP) meeting in Geneva, Switzerland on April 16-21, 2007.

Peter Ortner attended the Second National Conference on Ecosystem Restoration in Kansas City, Missouri on April 23-27, 2007.

Recent Publications*

BLACK, P.G., E.A. D'Asaro, W.M. Drennan, J.R. French, P.P. Niiler, T.B. Sanford, E.J. Terrill, E.J. Walsh, and J.A. Zhang, 2007: Air-sea exchange in hurricanes: Synthesis of observations from the Coupled Boundary Layer Air-Sea Transfer Experiment. *Bulletin of the American Meteorological Society*, 88(3):357-374.

Broecker, W.S., and R. WANNINKHOF, 2007: Mono Lake radiocarbon: The mystery deepens. *EOS, Transactions, American Geophysical Union*, 88:141-142.

Hendricks, E.A., and M.T. MONTGOMERY, 2006: Rapid scan views of convectively generated mesovortices in sheared Tropical Cyclone Gustav. *Weather and Forecasting*, 21(6):1041-1050.

Joiner, J., E. Brin, R. Treadon, J. Derber, P. Van Delst, A. Da Silva, J. Le Marshall, P. Poli, R. ATLAS, D. Bungato, and C. Cruz, 2007: Effects of data selection and error specification on the assimilation of AIRS data. *Quarterly Journal of the Royal Meteorological Society*, 133:181-196.

Jurado, J.L., G.L. Hitchcock, and P.B. ORTNER, 2007: Seasonal variability in nutrient and phytoplankton distributions on the southwest Florida inner shelf. *Bulletin of Marine Science*, 80(1):21-43.

Li, T., C.-Y. She, H.-L. Liu, and M.T. MONTGOMERY, 2007: Evidence of a gravity wave breaking event and the estimation of the wave characteristics from sodium lidar observations over Fort Collins, CO (41°N, 105°W). *Geophysical Research Letters*, 34(5):L05815, doi:10.1029/2006GL028988.

Pandya, R.E., D.R. Smith, D.J. Charlevoix, G.M. Fisher, S.T. MURILLO, K.A. Murphy, D.M. Stanitski, and T.M. Whittaker, 2007: The 15th AMS Education Symposium. *Bulletin of the American Meteorological Society*, 88(1):83-85.

Schechter, D.A., and M.T. MONTGOMERY, 2007: Waves in a cloudy vortex. *Journal of the Atmospheric Sciences*, 64(2):314-337.

THACKER, W.C., 2007: Estimating salinity to complement observed temperature, Part I: Gulf of Mexico. *Journal of Marine Systems*, 65(1-4):224-248.

THACKER, W.C., and L.R. SINDLINGER, 2007: Estimating salinity to complement observed temperature, Part 2: Northwestern Atlantic. *Journal of Marine Systems*, 65(1-4):249-267.

Tory, K.J., M.T. MONTGOMERY, and N.E. Davidson, 2006: Prediction and diagnosis of tropical cyclone formation in a NWP system, Part I: The critical role of vortex enhancement in deep convection. *Journal of the Atmospheric Sciences*, 63(12):3077-3090.

Tory, K.J., M.T. MONTGOMERY, N.E. Davidson, and J.D. Kepert, 2006: Prediction and diagnosis of tropical cyclone formation in a NWP system, Part II: A diagnosis of Tropical Cyclone Chris formation. *Journal of the Atmospheric Sciences*, 63(12):3091-3113.

ZHANG, J.-Z., and X.-L. HUANG. Relative importance of solid-phase phosphorus and iron on the sorption behavior of sediments. *Environmental Science and Technology*, 41(8):2789-2795.

*Names of AOML authors appear in capital letters.

Keynotes is published bi-monthly by the Atlantic Oceanographic and Meteorological Laboratory. Contributions and/or comments are welcome and may be submitted via email (Gail.Derr@noaa.gov), fax (305) 361-4449, or mailing address: NOAA/AOML, *Keynotes*, 4301 Rickenbacker Causeway, Miami, FL 33149.

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