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## A Collaboration for the Exploration of the Oceanography of Taiwan

The natural environment that characterizes the South China Sea and the western Pacific Ocean has attracted global attention due to the frequent and devastating natural disasters in the region, as well as the strategic importance of western Pacific nations to the global economy and political stability. In spite of this global significance, the South China Sea was still relatively unexplored from a scientific viewpoint until recently. Over the past 13 years, oceanographers from the United States and Taiwan, supported by the US Office of Naval Research and the Taiwan National Science Council, respectively, have worked together to probe this mysterious and fascinating sea. This joint effort has resulted in rewarding scientific and personal/professional partnerships, leading to a better understanding of the natural environment as well as establishing a model of long-term collaboration across the Pacific.

The mystical veil of the northern South China Sea was gradually pulled aside through these joint efforts, revealing the many diverse and dynamic phenomena described in this issue of *Oceanography*. We have come to see the northern South China Sea as a natural laboratory for investigating internal solitary waves; research into

their generation, transformation, and propagation has revealed a unique and massively energetic basin circulation. The distinctive island environments in this region may well be due to the waves' impacts on them, for example, Dongsha Atoll, where nutrients transported by the waves support coral growth and diverse marine species. Formation and deformation of huge sand waves may also result from the internal wave environment that is unique to the area around Taiwan.

The early partnership programs led to the study of the evolution of the internal tide and its interactions with the Kuroshio intrusion. The scientific community is only beginning to investigate the complex ocean interactions around Taiwan and along the whole Pacific Rim. The most frequent and intense typhoon generation in the world occurs in the western North Pacific Ocean. The ocean's role in typhoon initiation and typhoons' impacts on the ocean have been topics of joint Taiwanese/international investigations sponsored not only by the US Office of Naval Research and Taiwan National Science Council but also with participation of researchers funded by the US National Science Foundation, Japan, Germany, Korea, and the Philippines. Investigating the

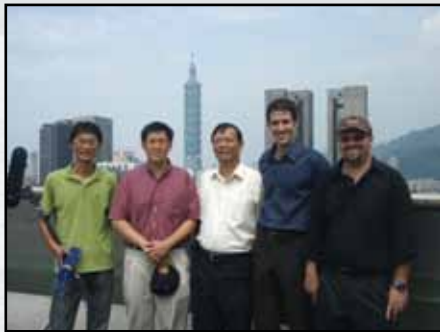
interactions between typhoon and ocean is a critical step in gaining a better understanding of the two components behaviors. Collaborations between oceanographers and atmospheric scientists made this extensive and novel mission possible. A four-month-long air-ocean field campaign collected a unique, exciting, and useful data set that may take several years to study fully.

We are excited to present in this special issue preliminary results of these investigations of the oceanography of Taiwan, ranging from the interaction of typhoon and ocean to the energetic internal tides that dominate the northern South China Sea. Our long-term collaboration has resulted not only in this wealth of critically important science but also in the training of students and postdoctoral researchers from both countries—cementing our partnerships through relationships and friendships that will endure.

— *Tswen Yung David Tang,*  
*National Taiwan University*

— *Terri Paluszkievicz,*  
*Office of Naval Research*





Photos contributed by David Farmer, Craig Lee, Tom Peacock, Steve Ramp, and Harper Simmons.