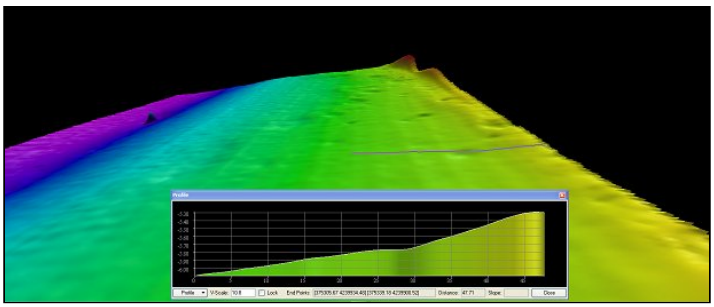
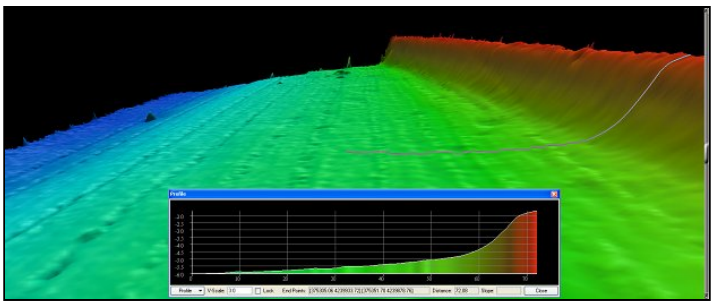
# NOAA Nautical Charting Calendar



*Data acquired with shallow water multibeam sonar system while running a line as close to shore as safely feasible.*



*Data acquired with PDBS sonar running same line as above. The PDBS system achieved a 20 m greater lateral inshore coverage providing a much more complete representation of the slope. The artifacts in the PDBS data are inherent to the technology which yields the lowest data density at nadir.*

**Phase Differencing Bathymetric Sonar**

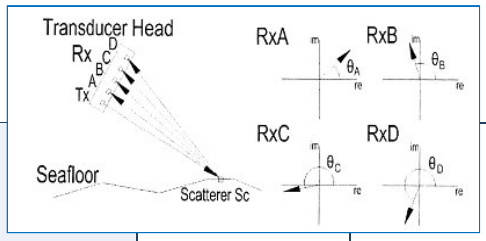
Phase Differencing Bathymetric Sonar (PDBS), also referred to as interferometric sonar, uses the measurement of a reflected sonar signal's phase at each of several receive elements to determine the angle from which the acoustic return originates.

This angle of origin, in combination with range calculated from the two way travel time of the signal, provides a discrete location on the seafloor. Sampling is done thousands of times per acoustic ping providing a cross-track profile of bathymetry. A number of consecutive profiles are then combined to build a three dimensional model of the seafloor.

NOAA and the University of New Hampshire are studying PDBS systems. The studies indicate that PDBS significantly increases efficiency and safety of operations in near shore and shallow water. The gains in efficiency and safety are due to the wider swath width that interferometric sonars produce compared to shallow water multibeam systems in areas shoaler than ~20m. The increased swath width lets hydrographers survey more than twice the shallow water area per unit of time and allows vessel operators to stay further away from hazardous features while acquiring a denser dataset than with other technologies. NOAA is actively studying the potential of PDBS for meeting the accuracy standards of nautical charting.

## May 2010

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | | | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |




*Phase is measured at each of several receive elements which are spaced at precisely known distances. The angle from which the return originated is calculated using differences in the phase as measured at each element*

Prepared by the Office of Coast Survey, National Ocean Service, NOAA, www.NauticalCharts.NOAA.gov, 1-301-713-2770.

Note: Add your information to the Calendar using Adobe Reader 7 or later. The tools are found at the Tools -> Commenting, and Tools -> Drawing Markup features of Adobe Reader.