

E7.4-10655

CR-138886

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A New Device for Acquiring  
Ground Truth on the Absorption  
of Light by Turbid Waters

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July 26, 1974  
Report on Significant Results  
NASA ERTS-1 CONTRACT NAS5-21837  
UN 362 SR 9654

Prepared for  
GODDARD SPACE FLIGHT CENTER  
GREENBELT, MD 20771

(E74-10655) A NEW DEVICE FOR ACQUIRING  
GROUND TRUTH ON THE ABSORPTION OF LIGHT  
BY TURBID WATERS Report on Significant  
Results (Delaware Univ.) 2 p HC \$4.00

N74-29687

Unclas  
00655

CSSL 08H G3/13

A New Device for Acquiring Ground Truth  
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A new device, called a Spectral Attenuation Board, has been designed and tested, which enables ERTS-1 sea truth collection teams to monitor the attenuation depths of three colors continuously, as the board is being towed behind a boat. Transmissivity, temperature, salinity and other parameters are also monitored continuously by other instruments. The device consists of a 1.2 x 2.5 meter flat board held below the surface of the water at a fixed angle to the surface of the water. A camera mounted above the water takes photographs of the board. The resulting film image is analyzed by a microdensitometer trace along the descending portion of the board. This yields information on the rate of attenuation of light penetrating the water column and the Secchi depth.

Red and green stripes were painted on the white board to approximate band 4 and band 5 of the ERTS MSS so that information on the rate of light absorption by the water column of light in these regions of the visible spectrum could be concurrently measured. The authors found that information from a red, green, and white stripe may serve to fingerprint the composition of the water mass.

A number of these devices, when automated, could also be distributed over a large region to provide a cheap method of obtaining valuable satellite ground truth data at preset time intervals.