Status and Operations at the Clouds and the Earth's Radiant Energy System (CERES) Ocean Validation Experiment (COVE) – Also a Baseline Surface Radiation Network (BSRN) Station

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Clouds and the Earth's Radiant Energy System (CERES) Ocean Validation Experiment (COVE) website: http://cove.larc.nasa.gov/

Introduction:

- COVE, located at Chesapeake Lighthouse, was established in 1999 as a surface validation site for CERES and other satellites.
- First data collection for BSRN began May 1, 2000 – Present.
- A table is provided of current instruments and measurements.
- Data collection is shown for select measurements collected within the last 5 years.
- Photos of COVE's location, instrumentation and the tower effect issue we have for our downlooking instruments are presented.

A wildfire affected measurements at COVE in June-July 2008. The above plots show 2 different measurements affected by the smoke from the wildfire. LEFT: The 7 wavelength Aethalometer measures Black Carbon (BC) and is tuned for conventional pollution. Organic Carbon (OC) aerosols cause smoke to have greater absorption in the UV than conventional pollution. Therefore, Ficke OC < BC (570 nm) – BC < 700 nm). Here, Ficke OC clearly identifies fires are present and makes a neat trace. RIGHT: Chlor-a (Chlorophyll-a) is measured with our Seaprum Cintel, part of AEROSOLBotics, Network (AERONET)-OceanColor. The smoke caused anomalously high readings to be measured and may confirm wildfire plumes as well.

Moving Forward:

- Chesapeake Lighthouse has been transferred to the U.S. Department of Energy (D.O.E.) from the U.S. Coast Guard as of January 1, 2013. Temporary research sites are being investigated at this time to determine the feasibility of installing instruments similar to those at COVE until renovations efforts commence.
- The D.O.E has plans to renovate Chesapeake Lighthouse for offshore wind research and this could take up to 2+ years to complete.

References: