

Initial Validation of VIIRS Skin SST Retrievals with Shipboard Radiometers

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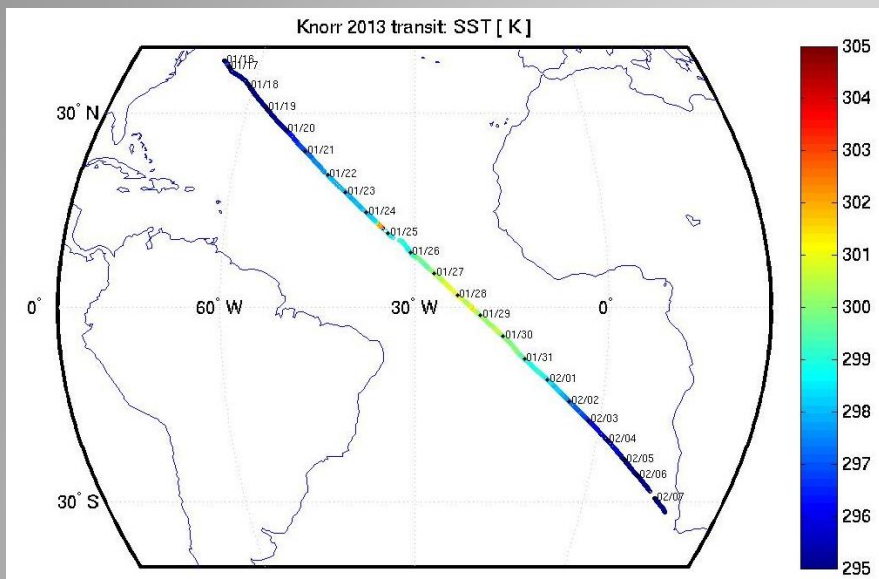
Introduction

Ship-board radiometers provide a valuable source of validation data for infrared SST retrievals: skin SST measurement.

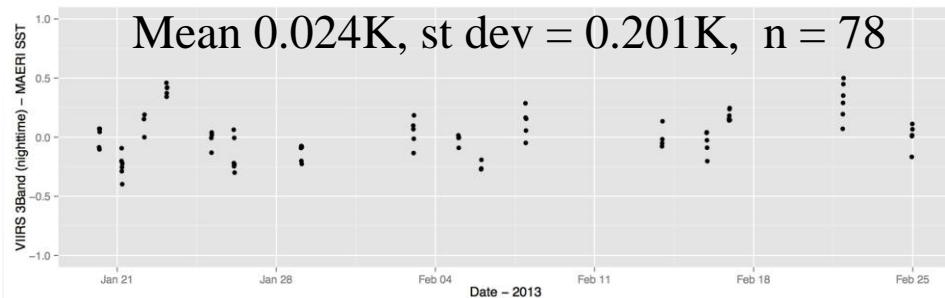
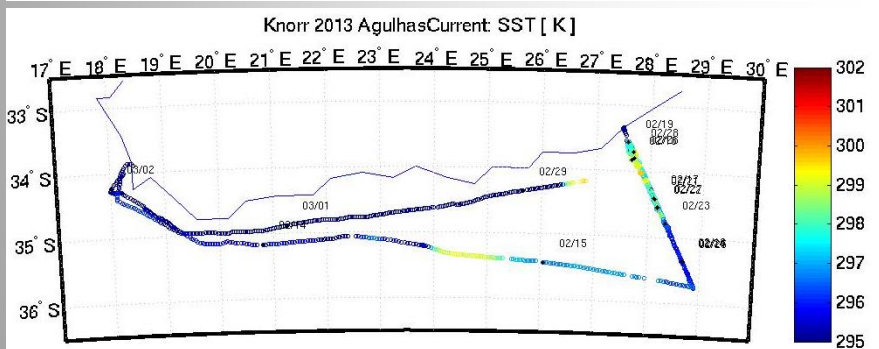
Ship-board radiometers are repeatedly calibrated using SI-traceable facilities.

Over time, ship-radiometers can sample repeated tracks, and broad range of environmental conditions.

Ship radiometers: M-AERIs



M-AERIs, new and old, on R/V *Knorr*. Transit from Woods Hole to Cape Town, and an Agulhas mooring recovery cruise.



Skin SST measurements from R/V *Knorr*. January – March 2013.

VIIRS v7.0 algorithm
Reference SST WindSat 5day average.

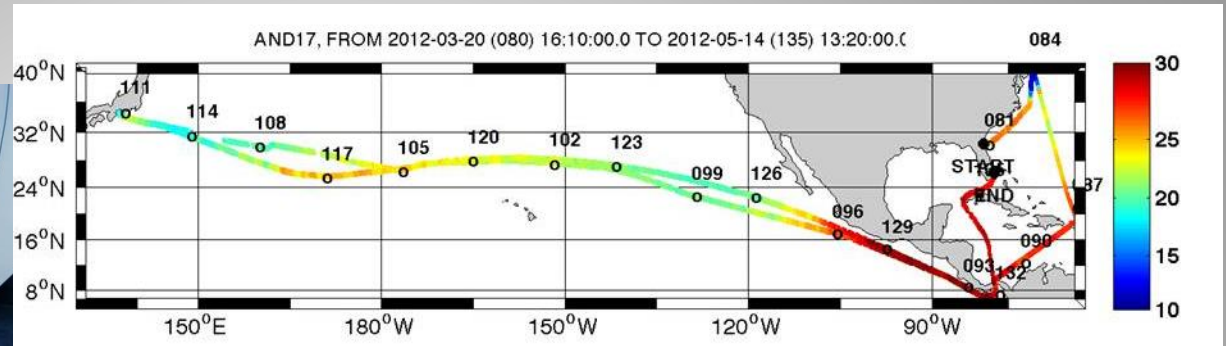
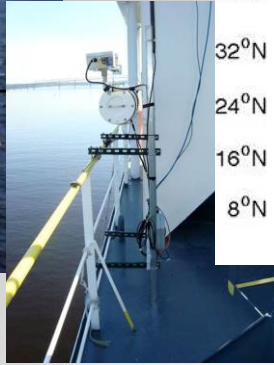
M-AERIs are Fourier Transform Infrared interferometers with two internal blackbody calibration targets. Pre- & post-deployment lab calibration against NIST-traceable calibrators.



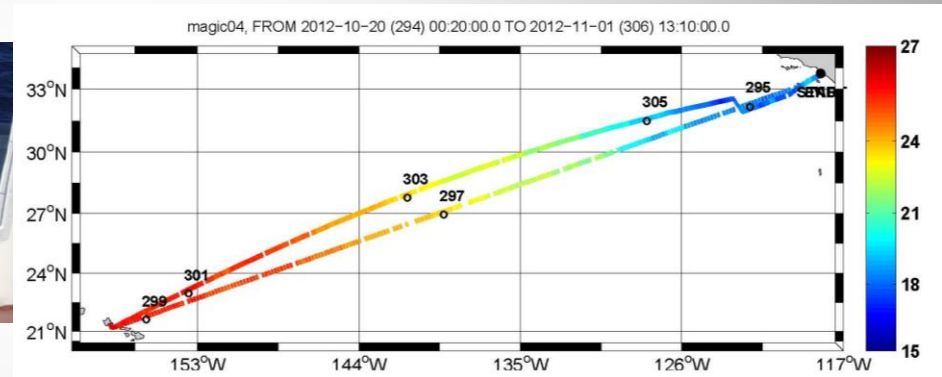
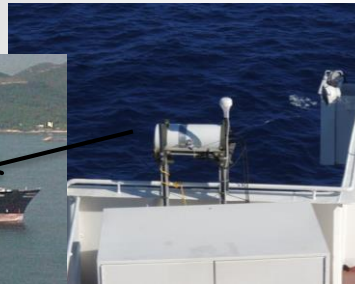
Ship radiometers: ISARs



*M/V Andromeda
Leader*

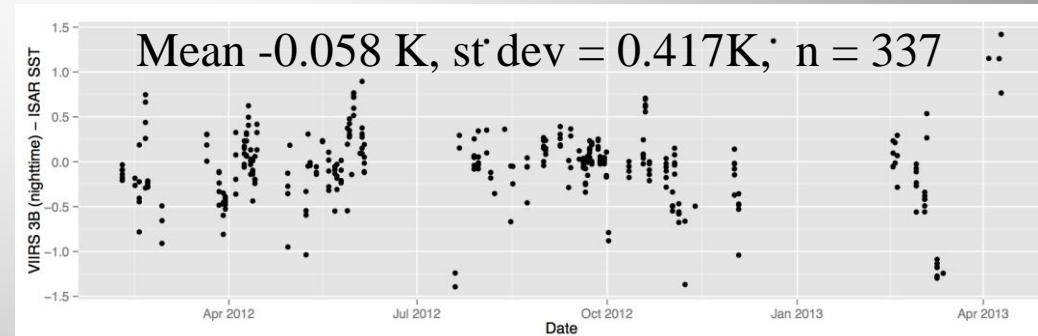


M/V Horizon Spirit

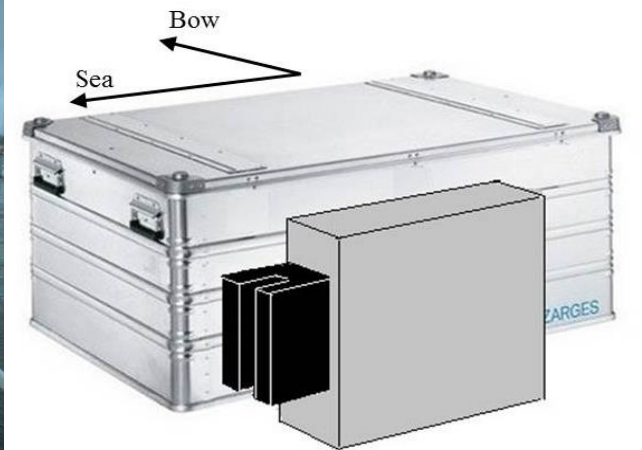
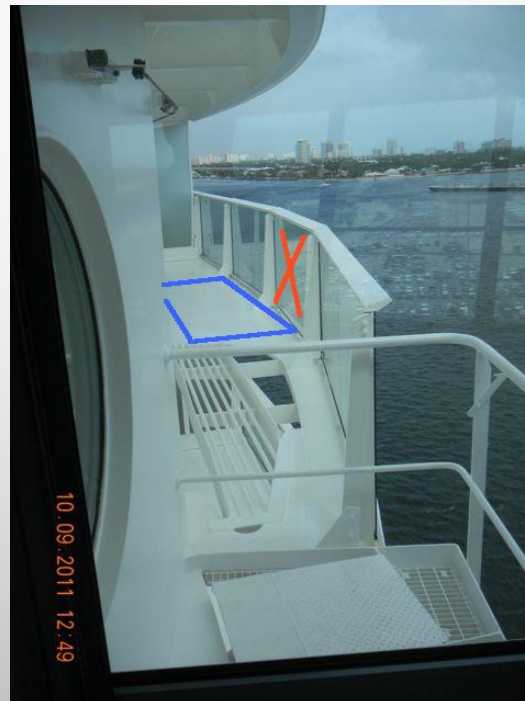
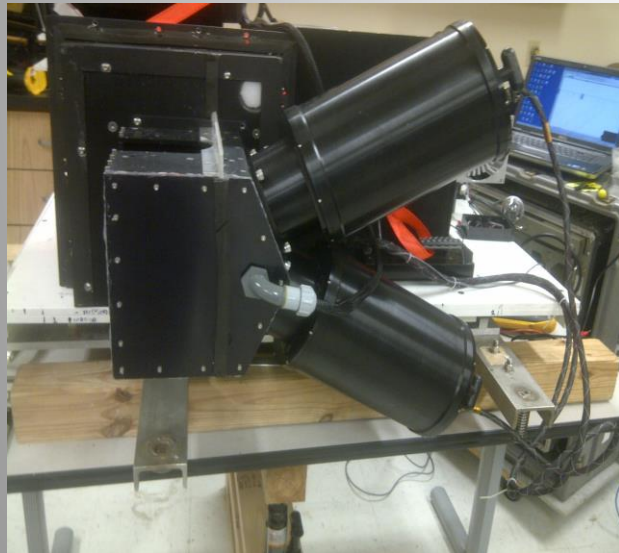


ISARs are autonomous filter radiometers with two internal blackbody calibration targets. Pre- & post-deployment lab calibration against NIST-traceable calibrators.

Data relayed in real-time by Iridium.



Allure of the Seas



Summary

ISARs have provided a good data stream from the *Andromeda Leader* and the *Horizon Spirit*.

M-AERI Mk2 has been deployed on the NOAA Ship *Ronald H Brown* and R/V *Knorr*.

M-AERI Mk2 will be installed on *Allure of the Seas* in September for unattended operations.

Validation of S-NPP VIIRS SSTs using M-AERIs and ISARs is giving very good results.