

SI-Traceable Space-based Climate Observing System

a CEOS and GSICS Workshop

National Physics Laboratory, London, UK

9-11 Sept. 2019

Workshop Report

Report Outline:

- 1.0** *Executive Summary (~8 pages)* *Hewison/Fox/Wielicki/Kopp*
- 2.0** *Societal Need and Economic Value (~4 pages)*
- 3.0** *Applications*
 - 3.1 Climate Change Observations (~8 pages)
 - 3.2 Weather (Temp, Humidity, Wind, Precipitation) (~4 pages)
 - 3.3 Land Imaging Constellations (~4 pages)
 - 3.4 Ocean Color (~4 pages)
 - 3.5 Ocean Wind (~2 pages)
 - 3.5 Cloud and Aerosol (~4 pages)
 - 3.6 Ocean and Land Ice Altimetry (~4 pages)
 - 3.7 Sea-Ice (~4 pages)
 - 3.8 Atmospheric Chemistry (~4 pages)
- 4.0** *Reflected Solar Passive Observations*
 - 4.1 Laboratory SI Traceable Calibration Methods (~4 pages)
 - 4.2 Reflected Solar Spectrometers (~4 pages)
 - 4.3 Reflected Solar Narrowband Imagers (~4 pages)
 - 4.4 Polarimeters (~2 pages)
 - 4.5 Lunar Spectral Irradiance (~4 pages)
 - 4.6 Characterizing Vicarious Surface Sites (~4 pages)
- 5.0** *Thermal Infrared Passive Observations*
 - 5.1 Laboratory SI Traceable Calibration Methods (~4 pages)
 - 5.2 Infrared Spectrometers (~4 pages)
 - 5.3 Infrared Narrowband Imagers (~4 pages)
- 6.0** *Passive Microwave Observations*
 - 6.1 Laboratory SI Traceable Calibration Methods (~4 pages)
 - 6.2 Microwave imagers and sounders (~4 pages)

- 7.0** *Broadband Radiation Budget Observations*
- 7.1 Total Solar Irradiance (~4 pages)
- 7.2 Spectral Solar Irradiance (~4 pages)
- 7.3 Outgoing Radiation Measurements (~8 pages)
- 8.0** *Radio-Occultation Observations (~4 pages)*
- 9.0** *Lidar Observations*
- 9.1 Cloud and Aerosol Lidar (~4 pages)
- 9.2 Altimeters (~4 pages)
- 9.3 Wind Lidar (~4 pages)
- 10.0** *Radar Observations*
- 10.1 Scatterometers (~4 pages)
- 10.2 Altimeters (~4 pages)
- 10.3 Cloud Radar (~4 pages)
- 11.0** *Gravity Observations (~8 pages)*
- 12.0** *Concepts to Improve Global Inter-Calibration*

Hewison