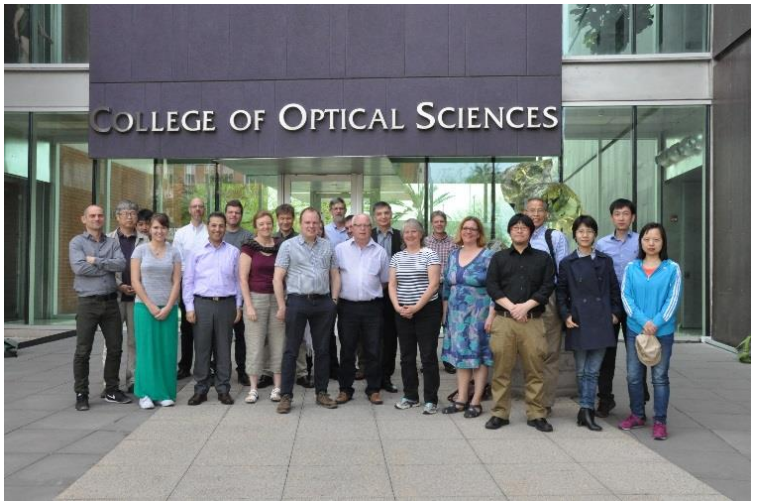
# WGCV IVOS Discussion on Reference Solar Irradiance Spectrum

Discussion led by Nigel Fox (NPL, WGVC IVOS Lead)

Report to GISCS by Jack Xiong (NASA) and Tom Stone (USGS)

# WGCV IVOS-29

- CEOS WGCV IVOS-29 & Associated Task Group Meetings, University of Arizona, Tucson, March 13-17, 2017
  - RadCalNet WG Beta testers meeting
  - RadCalNet WG meeting
  - MTF workshop
  - PICS workshop
  - IVOS Plenary Meeting
  - Participants
    - NPL, NASA, ESA, AIST, CNES, CMA, AOE, SDSU, U of AZ, KARI, ONERA, TELESPAZIO, DIGITAL GLOBE, RAYTHEON, ROSCOSMOS, ARGANS, VITO, STFC/RAL, …



# IVOS Discussion on Reference Solar Irradiance Spectrum

- Reference Solar Spectral Irradiance: one of the topics (CEOS initiatives) discussed at WGCV IVOS-29
- The following presentations were given in support as part of the discussion:
  - Nigel Fox: Reference Solar Irradiance Spectrum - Previous CEOS WGCV IVOS Discussion
  - Greg Kopp: Reference Solar Spectrum Considerations
  - Margit Haberreiter: PMOD/WRC solar reference spectrum derived from observational solar irradiance composite
  - Steven Dewitte: A solar reference spectrum for the (inter)calibration of earth observing satellites
  - Tom Stone: A Consideration for Spectral Resolution
- Recommendation made following extensive discussion

**Most presentations were given in previous GSICS/IVOS joint web meetings**
**Materials can be made available upon request (D. Doelling and N. Fox)**

# Presentations

- Nigel Fox:
  - CEOS and IVOS perspective; the need for a reference SSI
  - 2013 Webex meeting and conclusions; topics discussed at recent GSICS/IVOS Webex meetings (2016/17)
- Greg Kopp:
  - Use a composite with enhancement using solar-atmospheric model(s); relate spectra under different temporal and activity conditions
- Margit Haberreiter:
  - Advantages of SOLID + COSI dataset
- Steven Dewitte:
  - Solspec instruments and measurements
  - TSI scaling and long wavelength extension by Kurucz theoretical spectrum
- Tom Stone:
  - Need and approaches for high spectral resolution

# IVOS Recommendation and Way Forward

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| AP.2017-11 | Nigel Fox to discuss with Margrit Halbreiter and create a small task group (also including Tom Stone) to select a high spectral resolution solar spectrum and develop notes to guide users, to be presented to WGCV in May. Jack Xiong and Tom Stone to discuss this with GSICS and invite them into the task group. | End April |

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| R.2017-1 | IVOS recommends the selection of a high spectral resolution solar spectrum to become a reference spectrum that is based on the SOLID approach linking the Thuillier and COSI spectra giving both an extension into the IR and providing higher spectral resolution (target 0.005 nm), along with a technical note on how to interpret and use this model. |

Meeting minutes taken by Emma Woolliams (NPL)

A pragmatic interim solution that met the needs of Land Ocean and TIR atmosphere but that in the longer term a decision on an appropriate composite to extend into the UV and in that case in particular to take account of solar cycle variability would be needed and should be worked on by CEOS/GSICS following the philosophy outlined by Greg Kopp