



# ATOC COLLOQUIUM

## Welcome!

Please join us for the next ATOC Colloquium on **Friday, October 30**, from **11:00 AM–12:00 PM**. This week's colloquium features **Professor Peter Pilewski (ATOC/LASP)**. A link to join the colloquium via Zoom is provided beneath the abstract below.

## Libera: Continuity of Earth's Radiation Budget Climate Data Record

The recently selected NASA Earth Venture – Continuity Libera Mission, named for the daughter of Ceres in Roman mythology, will provide continuity of the Clouds and the Earth's Radiant Energy System (CERES) Earth radiation budget observations from space. Libera's attributes enable a seamless extension of the climate data record for outgoing Earth radiation. Libera will acquire integrated radiance over broad spectral bands in the shortwave (0.3 to 5  $\mu\text{m}$ ), longwave (5 to 50  $\mu\text{m}$ ) and total (0.3 to beyond 100  $\mu\text{m}$ ) and adds a split-shortwave band (0.7 to 5  $\mu\text{m}$ ) to provide deeper insight into shortwave energy deposition. Libera leverages advanced detector technologies using vertically aligned black-carbon nanotubes with closed-loop electrical substitution radiometry to achieve radiometric uncertainty of approximately 0.2%. Libera will also employ a wide field-of-view camera to provide scene context and explore pathways for reducing complexity in future missions.

The Libera science objectives associated with continuity and extension of the existing climate data record are to identify and quantify processes responsible for climate variability over various times scales. Beyond data continuity, Libera's new and enhanced observational capabilities will advance our understanding of spatiotemporal variations of radiative energy flow in the visible and near-infrared spectral regions. They will also enable the rapid development of angular distribution models to facilitate near-infrared and visible radiance-to-irradiance conversion.



**Zoom link:**

<https://cuboulder.zoom.us/j/99802151033>

**Password:** radiation

## About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences (ATOC) Colloquium is typically held **every other Friday** from **11:00 AM–Noon**. Colloquia alternate between the following formats: (A) Full-length talk by a faculty member or invited speaker, (B) Three conference-length talks by graduate students. If you would like to nominate a speaker (including self), please email the ATOC Colloquium Committee Chair, Prof. Jan Lenaerts ([jan.lenaerts@colorado.edu](mailto:jan.lenaerts@colorado.edu)). Please visit [www.colorado.edu/atoc/colloquium](http://www.colorado.edu/atoc/colloquium) for further details.