



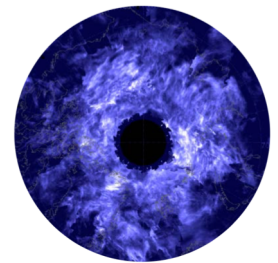
# ATOC COLLOQUIUM

## Welcome!

Please join us for the inaugural colloquium on **September 7, 2018** featuring **Professors Cora Randall and Brian Toon**. With exactly *50 combined years* in the Program in—then Department of—Atmospheric and Oceanic Sciences at the CU Boulder, who better than Professors Randall and Toon to kick off the year with their most exciting research projects as well as some perspectives on ATOC past, present and future. Join us for coffee before, and lunch will be served after!

### Clouds on the Edge of Space

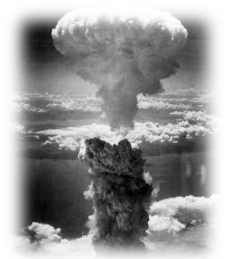
*...Insight from the NASA Aeronomy of Ice in the Mesosphere (AIM) Mission.* The NASA Aeronomy of Ice in the Mesosphere (AIM) satellite mission was launched in 2007 to study polar mesospheric clouds (PMCs). Poetically referred to as "noctilucent" or "night- shining" clouds, PMCs appear at high latitudes in the mutable summertime mesosphere far above the Earth – on the edge of space. Motivated by the suggestion that PMCs could be the miner's canary of climate change in the upper atmosphere, the mission goal was to resolve why PMCs form and vary. This talk will summarize some of the scientific highlights of the AIM mission, including an increasing realization of the extent to which distant regions of the atmosphere are linked together. We'll also discuss how operational challenges led to the proverbial morphing of lemons into lemonade.



Polar mesospheric clouds over the Arctic (AIM).

### The Environmental Impacts of Nuclear War

*...are Far More Damaging than the Explosions and could kill 90% of the Earth's Population.* Fires started by nuclear explosions in cities would create a dense stratospheric soot layer. The smoke would rise to 80 km by solar heating, and will become global in weeks. The ozone layer will be destroyed by stratospheric temperatures more than 100K above normal, and the loss of light at the surface would produce sub-ice age temperatures, a nuclear winter, which will stop all agriculture. A group of faculty at CU (plus Rutgers and Chicago) is studying these issues, and also natural phenomena that can guide the models.



## About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences Colloquium will be held **every other Friday** from **11:00 AM-noon** in **SEEC N126**. Colloquia will 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 and the upcoming schedule.