



RECOMMENDATIONS FROM THE NOVEMBER 2010 SCIENCE COMMUNITY WORKSHOP ON POLAR ORBITING INFRARED AND MICROWAVE SOUNDERS



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GUIDING QUESTIONS

1. What is the range of scientific research currently carried out with atmospheric sounding instruments including AIRS, IASI-A, AMSU, TES, and MOPITT?
2. How can the planned CrIS, ATMS, IASI-B, IASI-C continue to support the scientific research enabled by the EOS sounders?
3. What requirements are needed from future sounders (e.g. post-EPS, post-NPOESS) to address the critical challenges in weather, climate, air quality and carbon cycle research.
4. How can planned and future sounders complement, or act as a bridge to NASA Decadal Survey missions?



RESPONSE

- **Weather Forecast & Climate Processes**
Water Vapor Feedback
MJO, ENSO, etc.
Cloud Microphysics
Model Validation
- **Atmospheric Composition**
- Ozone, Carbon Monoxide, Methane, Carbon Dioxide, Sulfur Dioxide, Ammonia, Methanol
- Transport, Dust, Carbon Flux, Model Validation
- **Planned sounders can do much of what was achieved with AIRS and IASI**
Concerns identified at the Workshop
- **Higher Horizontal Resolution**
Improved Contrast in Cloudy Scenes
- **Higher Vertical Resolution**
Improved Boundary Layer Sensitivity
- **Co-Located Vis/NIR, IR, MW**
Improved Error Estimation
- **Sounders complement many NASA Decadal Survey missions including: CLARREO, ASCENDS, GACM, ACE, PATH, GPM, OCO-2**

TOP 3 RECOMMENDATIONS

1. The formation of a US based Sounding Science Team is required to identify the current and future needs of the weather, climate and atmospheric composition communities using data from the IR and MW sounders
2. The JPSS enable the full spectral resolution possible with the FM-1 CrIS on NPP as soon as possible.
3. NASA should begin development of an advanced IR sounder with high spatial resolution and improved spectral resolution to be ready to follow the current planned sounders expected to retire in the 2020 timeframe.



NASA Group Achievement Award Presented to NOAA AIRS Team Members

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<http://nasa-sounder-workshop.jpl.nasa.gov>

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