



# Models, In situ, and Remote sensing of Aerosols (MIRA)

Quasi-quarterly Newsletter Number 4

Greg Schuster

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Archives available [here](#)

## Welcome

MIRA is an unfunded working group open to all interested aerosol scientists. The group seeks to advance knowledge of observations and model results through the encouragement of collaborations. Details can be found on the MIRA webpage at <https://science.larc.nasa.gov/mira-wg/> and in this [powerpoint talk](#) presented by Chip Trepte at AGU in 2022.

## A Paradigm Shift to *Topics*

MIRA is in the early stages and evolving as we interact with our fellow scientists. One thing that we learned is that the word *project* implies tangible requirements for some people, which would require tangible funding. While we do have goals for our activities and we want MIRA science to progress, MIRA is a bottoms-up international effort that does not impose requirements. So going forward, we refer to our focused activities as *topics*.

Links to the current MIRA topics can be found here:

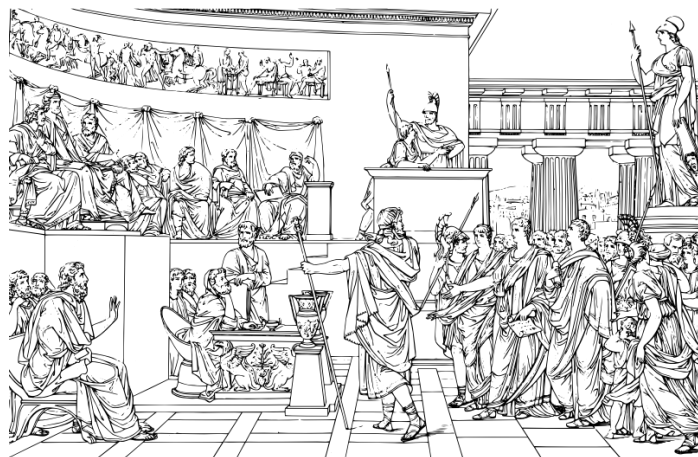
- [Particulate Matter from Lidars in Space \(PMLS\)](#)
- [Mapping Aerosol Lidar Ratios for CALIPSO \(MAC\)](#)
- [Tables of Aerosol Optics \(TAO\)](#)
- [Harmonization of aerosol Assimilation Models and Retrievals \(HAMR\)](#)

## Funding?



Although MIRA does not provide funding, the MIRA topics are creating conversations about the linkages between aerosol disciplines and highlighting the importance of international dialogue. As MIRA

messaging and awareness grows, we expect panelists to view research associated with the MIRA topics as positive elements in proposals. Furthermore, funding solicitations are created on the basis of ongoing scientific discussions, and MIRA provides a framework to enable this.



## Asia Oceania Geosciences Society (AOGS)

There will be a MIRA session at the annual [Asia Ocean Geosciences Society meeting](#) in Singapore this Summer (Jul 30 to Aug 4). Our goal for this meeting is to strengthen connections with scientists in that part of the world and to provide opportunities to make new connections. So please forward this newsletter to your colleagues, especially those located in regions favorable for travel to Singapore. Look for session AS39 — the abstract deadline for AOGS is Feb 14, 2023.



## 'Morphing MIRA' Webinar Series

Although we hope to see you at AOGS and other international meetings, many of us have constraints that prevent us from traveling thousands of kilometers on a regular basis. Nonetheless, MIRA was formed on the premise that we can all benefit from increased global interactions.

To facilitate this interaction, the MIRA Steering Committee is in the process of creating a 'Morphing MIRA' webinar series. The purpose of this series is to open international discussion about strengthening interdisciplinary activities.

We are in the early stages of development, but we anticipate monthly presentations with three rotating GMTs (8 hours apart). This will give everyone a chance to see at least 1/3 of the presentations during 'normal' working hours and allow speakers to share their work at a comfortable hour in their own time zone. We will record and post the webinars, too.

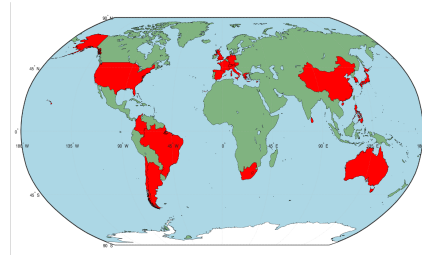
We are targeting meetings every two months, with our first meeting in March 2023 at 13 GMT. This will be followed by meetings in May at 21 GMT and in July at 5 GMT.



## TAO seeks a postdoc

There has been much enthusiasm for the Tables of Aerosol Optics (TAO) at the many meetings that I attended last year, but progress has been slow due to a lack of resources. We clearly need a full-time postdoc to move this work into the next phase, so we have advertised a NASA Postdoctoral Program (NPP) position at [www.zintellelect.com](http://www.zintellelect.com). See the de-

scription of the position at the end of this newsletter and contact [gregory.l.schuster@nasa.gov](mailto:gregory.l.schuster@nasa.gov) to discuss.



## MIRA Email List

We encourage subscribers to use the MIRA list server to post newsworthy items of interest to the community, such as aerosol conferences, sessions, webinars, relevant public databases and code that are not already listed on the MIRA website. The list is moderated in the background, so direct messaging to [mira@espo.nasa.gov](mailto:mira@espo.nasa.gov) is encouraged (no need to request forwardings).

The MIRA email distribution list reaches 221 members in 22 countries, but we are working to expand even further. Please forward this newsletter to colleagues and encourage them to subscribe to MIRA at <https://espo.nasa.gov/lists/listinfo/mira>.



## Send us Links to your Databases

We are collecting links to databases of interest to aerosol science on the MIRA webpage (<https://science.larc.nasa.gov/mira-wg/databases/>). So far we have mainly focused on aerosol refractive indices, but we plan on extending this to include other aerosol analysis tools (e.g., optics calculations, source code, etc.) If your project has a public-facing webpage that includes data/code of interest to the MIRA community, send your weblinks and a one sentence description to [mira\\_crew@lists.nasa.gov](mailto:mira_crew@lists.nasa.gov). Please keep in mind that we do not have a dedicated web development team, and that new material will take some time to incorporate.

## Last year's meetings

Last year we focused on getting the word out about MIRA, and we presented MIRA at 18 presentations at 10 meetings in four countries.

We ended the year with four very successful MIRA sessions at the Fall AGU meeting in Chicago (two orals, one in-person poster, and one virtual poster session). Thank-you to everyone who participated as presenters and/or audience members. I would also like to thank the session conveners and chairs who volunteered their time to make the MIRA sessions a success — Oleg Dubovik, Meloe Kacenelenbogen, and Carlos Pérez García-Pando.

## Looking forward to 2023

As we move into 2023, we will be spending less time talking about MIRA as a concept and more time talking about the MIRA topics. We have listed some meetings of relevance to MIRA in the table below, but we can't attend all of the meetings. Hence, we are looking for enthusiastic supporters for help. If you are presenting material relevant to a MIRA topic in 2023 (or you would like to create a new topic) and the MIRA vision appeals to you, please consider promoting MIRA with your colleagues. We can provide you with materials (for example, a powerpoint slide to slip into your talk, or perhaps a MIRA poster).

*Opinions in this newsletter are the personal views of the author and do not represent official NASA policy.*

Anyone can subscribe to the MIRA email list server at <https://espo.nasa.gov/lists/listinfo/mira>  
The archive of all email messages is available at <https://espo.nasa.gov/pipermail/mira/mira@espo.nasa.gov>  
Post to news by sending email to

MIRA Homepage: <https://science.larc.nasa.gov/mira-wg/>  
Archived newsletters: <https://science.larc.nasa.gov/mira-wg/info/>

Contact the MIRA Steering Committee at [mira\\_crew@lists.nasa.gov](mailto:mira_crew@lists.nasa.gov)

Conferences (hyperlinked)	Location	Date	Submit Date	MIRA people
<a href="#">EGU 2023</a>	Vienna, Austria	Apr 23-28	-	
<a href="#">Electromag Light Scat. XX</a>	Almuñecar, Spain	May 14-19	Mar 3	Schuster
<a href="#">ICNAA (Nucleation)</a>	Brisbane, Australia	June 26-30	Feb 3	
<a href="#">IGARRS</a>	Pasadena, CA	July 16-21	Jan 20	
<a href="#">Int Conf Carbon Particles Atmos</a>	Berkeley, CA	Jul 9-12		
<a href="#">Asia Oceania Geosci. Soc. (AOGS)</a>	Singapore	Jul 30-Aug 4	Feb 14	<b>MIRA Session</b>
<a href="#">Asian Aerosol Conference (AAC)</a>		Nov 14-18		
<a href="#">European Aer. Sci. Conf (EAC)</a>	Malaga, Spain	Sep 2-8	Feb 28	
<a href="#">EUMETSAT</a>	Malmö, Sweden	Sep 11-15	Feb 12	Dubovik, Trepte
<a href="#">Aerocom/AeroSat 2023</a>	Undecided	Oct		Chin
<a href="#">Amer. Assoc. Aer Res (AAAR)</a>	Portland, OR	Oct 2-6		
<a href="#">AGU</a>	San Francisco, CA	Dec		<b>MIRA Session</b>

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## MIRA Steering Committee

Greg Schuster (Chair)	NASA Langley Research Center, USA	gregory.l.schuster@nasa.gov
Chip Trepte	NASA Langley Research Center, USA	charles.r.trepte@nasa.gov
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Sang-Woo Kim	Seoul National University, Korea	sangwookim@snu.ac.kr

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See TAO Postdoc Solicitation at [www.zintellect.com](http://www.zintellect.com)

### *Linking Aerosol Measurements to Modeling Efforts*

Contact [gregory.l.schuster@nasa.gov](mailto:gregory.l.schuster@nasa.gov)  
NASA Langley Research Center  
Hampton, Virginia

This research opportunity focuses on linking aerosol measurements to modeling efforts. The Models, In situ, and Remote sensing of Aerosols (MIRA) is an international working group of 200+ members in 22 countries that brings worldwide expertise from all of these elements together and facilitates collaborative work within the atmospheric aerosol specialty. One NASA project within the MIRA working group is the Table of Aerosol Optics (TAO). TAO is a new community effort that links all of the aerosol specialties together by applying single-scatter computations to representative measurements for climate model and remote sensing applications. TAO updates the aerosol tables in Shettle and Fenn (1979) and Hess et al. (1998) with computations that are based upon recent measurements, and TAO will use an open data repository to allow community contributions and the dynamic evolution of contents. The TAO team at NASA Langley Research Center is seeking post-doctoral candidates interested in science research topics that leverage MIRA and TAO efforts and advance the linking of aerosol measurements and modeling capabilities.

### References

Hess, M., P. Koepke, and I. Schult (1998), Optical Properties of Aerosols and Clouds: The Software Package OPAC, Bull. Am. Meteorol. Soc., 79 (5), 83144.

Shettle, E., and R. Fenn (1979), Models for the aerosols of the lower atmosphere and the effects of humidity on their optical properties, Tech. Rep. AFGL-TR-790214, Air Force Geophysics Laboratory.