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Editors

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Introduction

Once again, the conference Infrared Remote Sensing and Instrumentation XX was held in San Diego, California, August 13 to 14, 2012, forming a part of the annual meeting of SPIE, a technical society dedicated to the advancement of science and engineering through the use of light. This was an especially important meeting for the loyal participants at this venerable meeting: we completed the twentieth in the series of these conferences making this the second oldest conference at the annual meeting. The next meeting will be held again in San Diego during the second week of August 2013.

On behalf of the authors, participants, readers of the proceedings, and especially on our own behalf, we wish to express our profoundest appreciation to the chairs of the smoothly run sessions. Dr. Sarath Gunapala organized the very first session, dealing with the significant advances that the NASA Jet Propulsion Laboratory is accomplishing on near, far, and multispectral IR detectors in support of space and defense applications.

The second session was our traditional "Infrared missions and instruments" where we learned the status of the established instruments and new concepts being proposed for future space, Earth, astronomical, and atmospheric exploration. Our third session was the key to any successful infrared mission, titled "Infrared technology and in-flight calibration." New missions arise with the birth of new key technologies. Without calibration we cannot trust the data that we receive in remote sensing.

When people used to ask me (MS) what the IR instruments actually do (i.e., what is the subject matter of this conference), I used to stumble. How do you tell in three words about the detection of an invisible planet orbiting a far-away star with infrared technology in a sentence or two? What about explaining to them that we deal with such everyday issues as monitoring the health status of Earth? What they like to hear is that we can predict the weather trends. This is the answer that they appreciate, because so much depends on weather especially in the last few years. The central session of the conference, titled "Instruments for infrared atmospheric probing," included presentations on this fascinating subject area. Every year we also try to have a session on either forest fire detection, propagation and monitoring from mobile platforms, or at least a few key presentations. It appears that with the changing weather patterns, the Earth surface is suffering more deforestation with the fire eruptions on all continents.

The next two sessions, sessions five and six, included the traditional science of radiometry and thermography. They were managed effectively and charmingly

by a team of Dr. John Gille from the University of Colorado, and Dr. Gonzalo Paez from the Optical Research Center in Mexico. They brought the art of collaboration to the level of courtesy that would impress even *Miss Emily Post*!

The seventh session was dedicated to the focal plane development at Raytheon, generating large number of very interesting questions with the promising title, "Toward the larger and more robust infrared arrays at Raytheon." Both the session organization and the challenge of dealing with some very difficult questions befell Mr. Neil R. Malone of Raytheon Company. We were treated to the description of new pixel-addressing technology allowing simultaneous detection of very intense and very weak sources without any bleeding or spillover to the neighboring pixels. The technology for the detection of a planet next to a bright star is closer every day!

Nearly fifty papers were presented in this conference, with truly an international scientific participation. A couple of papers were cancelled with advanced warning so alternate plans were put in action. Majority of presenters found the requisite time to write up their research accomplishments in a technical paper and submitted their work for inclusion in the proceedings for future reference. Their work may be downloaded from the SPIE Digital Library. Recently, their accessibility has been appreciably facilitated for the authors who pay the publication charges in the SPIE Journals.

Within the last few years, in the call-for-papers of the SPIE conferences, there has been inserted a little advisory that all papers are nowadays reviewed by the chairs and members of the technical committee. Many SPIE participants used to make an assumption that this is just *pro-forma*, so that our conferences would "look good." The truth is that each paper has been read carefully by at least one chair, for as long as we have been involved in these activities. And yes, the papers look good! Conference organization, just like being a journal editor, attracts a person who is interested in many subjects, not to say everything, and who reads anything that has words written or printed on it. Both of your chairs devour reading material. SPIE has recently put in practice an excellent review system where the input of the committee members can be taken in account when sending suggestions back to the authors. The papers at our conference have historically been of the highest levels, so the suggestions have to do mostly with formatting: maybe the European author forgot that the European paper size is different from that in the United States, or the format changed automatically because *computers know everything better*. We believe that one more look by an impartial reader at the final quality work that has been submitted by the author makes the paper more attractive, and the conference proceedings book becomes more informative and authoritative.

We pretty much had two questions per presentation. The dexterous moderators succeeded most of the time to suggest that further discussion be taken at the

break time. Sometimes we were caught in the exchange among the members of the audience that sounded most exciting, but as they say in the show business, "the show must go on." The good news is that the authors succeeded in making their presentation relevant to the audience, and the audience was interested in learning as much as they could. A truly win-win situation! We wish to express our appreciation to the participants, both the authors and the active audience who made the discussion so lively.

Special thanks are expressed to the SPIE staff for providing friendly guidance and organizational support to meet all the deadlines. Organizing a technical conference and publishing Proceedings involves hard work of a team of dedicated and knowledgeable people whose discrete advice to the chairs and guidance makes a conference a success. It is important to keep in mind that the SPIE staff handled and coordinated several thousand talks, and still, the whole event went smoothly as clockwork. We thank them for their efficient assistance.

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