

Arab Conference on Astronomy and Geophysics the 5th Assembly (ACAG-5)

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The international Arab Conference on Astronomy and Geophysics (ACAG) has been held every two years since its initiation in 2008 by the Minister of Higher Education and Scientific Research of Egypt and the General Secretary of the League of Arab States. The objectives are to hold ACAG in all Arab states and strengthen the collaborations among the Arab countries. However, any non-Arabic country is welcome to join.



The author of this article, Sultana N. Nahar, the first woman Guest of Honor at ACAG-5.

I attended the 5th Assembly held at the National Research Institute of Astronomy and Geophysics (NRIAG) in Helwan, Egypt during October 17 - 20, 2016. It was my honor to be invited as the first female Guest of Honor at ACAG along with two Emirs from the United Arab Emirates. As told, I might be the first female guest of honor at any other Arab conferences.

NRIAG in Egypt has been the main host for ACAGs, but the plan is now to move to other Arab countries. Egypt is the most attractive place for students and researchers of North African and Middle-Eastern countries for education and research. Founded in 1839 in Boulac, NRIAG (previously the Helwan observatory) is the oldest observatory in North Africa. It moved to Abbassia and then to Helwan in 1903 where it is currently located. It runs 11 labs all over Egypt with space and solar, seismology, geomagnetism, geoelectric, and geodynamics research labs. NRIAG also has a 74-in mirror telescope in the Kottamia mountains and runs two centers: the National Data Center and Kottamia Center of Excellence.

On the first day of ACAG-5, there were organized student sessions in the morning and an inauguration ceremony in the afternoon. The NRIAG and CRAAG (the Algerian institute similar to NRIAG) signed an MOA during the inauguration ceremony in the presence of the Egyptian Ministry for Cooperative Studies on the new perspectives of continental magnetic and magnetotelluric studies in Africa. They also had a joint treaty with Malaysia. ACAG-5 had over 150 abstracts and about 300 participants from various institutions in Egypt, Algeria, Chile, France, Germany, Iraq, Japan, Jordan, Malaysia, Morocco, New Zealand, Portugal, Russia, Saudi Arabia, Spain, Switzerland, United Arab Emirates, and the United States.



Nahar (left) with other female participants at ACAG5.

ACAG presentations on astronomy covered topics such as: Galactical Astronomy and Extragalactic Astronomy, Stellar and Theoretical Astronomy, Solar Physics and Solar Energy, Solar Radiation and Pollution, Historical Astronomy, Space Science and its Applications, Cosmology and High-Energy Physics. Geophysics included topics such as: Natural Hazards and Development, Seismology and Earthquake Engineering, Geodesy and Geodynamics, Environmental and Applied Geophysics, Archaeogeophysics, Petroleum Geophysics, and Water Resources and their Protection. Astronomy and geophysics talks were presented in parallel sessions. They also held workshops on astroinformatics, wireless

sensors, and data fusion in remote sensing. At the suggestion of the scientific committee, I presented an hour-long invited talk on atomic astrophysics of stellar spectroscopy for exoplanetary host stars, which was of great interest for the astronomy participants.

The conference also included posters and displays about the scientific knowledge of the ancient Egyptians. The sundial was invented and used during the Pharaohs' time. One poster showed their knowledge of astronomical calculation by displaying a picture of Pharaoh king Ramses II whose face shines with sunlight twice a year inside a temple, on his birthday in October and his coronation day in February.



Recipient of Sultana N. Nahar prize, Dr. Ahmed Badawy, (second from left), shaking hands with Nahar.

Both the opening and closing ceremonies were conducted in Arabic, and President Hatem Odah assigned a committee member to tell me when I was called to walk to the podium to receive my Guest of Honor medal. At the closing ceremony, I spoke about the American Physical Society being a most active scientific network and invited them to consider APS membership. Quite a number of them have since become members. When I asked Dr. Zohair Nawab, the President of the Saudi Geological Survey and a PhD holder from Western Ontario University in Canada, whether he could speak in English at the closing ceremony, his response was that he preferred Arabic since people from about 25 countries and most of the conference participants spoke Arabic. Most of the banners as well as some abstracts were in Arabic and I sat in a couple of presentations in Arabic. However, the point was noted when I suggested running English subtitles for non-Arabic participants during Arabic presentations. There were also a couple of presentations, which showed correspondences between new findings in astronomy and the interpretations in the Quran.

During the closing ceremony, a number of participants were recognized for having the best presentations in various categories, one of which was for a presentation on the perfect modeling of solar flares. Professor Somaya Saad sponsored two such prizes in astronomy in honor of two astronomers in NRIAG who recently passed away. The annual Sultana N. Nahar prize for the best publications over the past five years was awarded to two NRIAG members, Dr. Ahmed Ghitas in astronomy and Dr. Ahmed Badawy in geophysics.

In addition to the conference, some participants took the time to explore the region. All international participants and some committee members stayed on a boat hotel named Tuya on the Nile, and several participants visited the pyramids and sphinx in Giza. They were in awe of the ancient technology used to build such wonders. We saw a wooden Khufu ship called the sun boat to be used in the afterlife, which has ropes that are still intact after thousands of years. It is also a puzzle how the ancient Egyptians managed to build the huge pyramids with stones that are about five feet in height and weigh anywhere from a few to 10 tons. Though these need preservation from damage, many tourists defy the signs not to climb the pyramids.

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