108th Annual Meeting Abstracts

Key Note Speakers

Gordon Myers, 30 minutes

50th Anniversary of Moon Landing,
Personal stories from inside the Mission Control Center

This July we celebrate the 50th anniversary of landing on the moon. It was a momentous accomplishment. In just twelve years we went from launching our first satellite to Armstrong stepping onto the lunar surface. Why did we go? What drove the decision for President Kennedy to announce such a challenging goal? How did the technology of that era, so antiquated when we look back today, enable us to achieve the goal? The presentation will take us back to 1950's America and the shock of Russia's early space achievements. It will describe how the US developed the technology to get us to the moon and you'll hear personal stories describing what it was like working in the Mission Control Center

Dr. Ulisse Munari, 30 minutes

Novae erupting within symbiotic binaries: getting ready for coming fireworks

In a classical nova, once launched at high speed the ejecta continue their expansion unimpeded in the surrounding void forever. If the nova occurs on a WD orbiting within the thick wind of a cool giant or a Mira,i.e. in a symbiotic binary, the ejecta slam onto the pre-existing circumstellar material and are rapidly decelerated, with consequent emission of very high energy GeV gamma-rays and a lot of other awesome exotica. But this is just one of many different types of outbursts that a symbiotic binary may undergo, including a final one as a Type Ia Supernova, offering endless opportunities for fun as well as intriguing science to the keen observer. I'll review the nature of symbiotic binaries and of their outbursts in particular, and if we - as a global pro/am community – are truly ready for the anticipated coming ones. I'll do that primarily from the perspective of the advanced amateurs, those who carry out fully transformed multi-band photometry and master pro-level spectroscopy.

Dr. Karen Kinemuchi, 30 minutes

The Frontiers of RR Lyrae and Cepheid Variable Star Research
I will present highlights of the RRL/Cep 2019 Conference : Frontiers of Classical Pulsators - Theory and Observations, held in Cloudcroft, New Mexico. This conference is a bi-annual gathering of astronomers to discuss our favorite stars, the RR Lyrae and Cepheids. With datasets coming from a variety of ground and space based projects, new discoveries as well as new questions are formed for classical pulsator science. In my overview, I will briefly cover some of these exciting results from the conference.

Dr. Mario Motta, 30 minutes

Human and environmental effects of light Pollution
As a past AAVSO president, I share the AAVSO concern for preserving dark skies, and I have been active in light pollution (LP) issues for over 30 years. When I was elected and served for 8 years to the American Medical Association,Äôs (AMA) council on science and public health, I was able to initiate AMA reports that eventually became and remain AMA policy on light Pollution, as a public health issue. I have now been elected to the AMA Board of Trustee,Äôs, and will present current AMA policy on LP issues. This policy has dramatically altered the initial environmentally toxic plans for widespread LED light conversion worldwide.

The inherent energy efficiency of LED lighting makes the push for conversion on purely economic reasons for many municipalities and states. The lower energy use results in a lower air pollution burden as much of the energy produced is based on fossil carbon fuels. Taxes to pay for this energy use are proportionally reduced as well. Furthermore, maintenance costs are reduced due longer LED lamp life.

Not all LED light is optimal, however, when used as street lighting. The design of the lighting Fixture can result in glare if designed improperly, and thus create a road hazard condition. In some white LED lighting the color spectrum produces too much blue wavelength. This contributes to disability glare as this scatters more in the human eye. Excessive blue at night suppresses the hormone Melatonin with subsequent deleterious health effects.

The excessive blue spectrum is particularly environmentally problematic to many nocturnal species. 60% of animals are nocturnal and potentially are affected adversely

by exposure to nighttime electrical lighting. Thus there are thus significant human and environmental concerns in regards to short wavelength LED emission. I will present the data and resources for use by AAVSO members to make use this information for LP advocacy.