

# The Past, Present, and Future of the Elser-Mathes Cup

Recent developments in Amateur Radio technology and Mars exploration could lead to a winner of this 87-year-old award within this century.

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Many hams know that a visit to ARRL Headquarters in Newington, Connecticut isn't complete without a stint on the air at WIAW, a tour of the Lab, or a long look at the historic rigs in the League's Amateur Radio museum. Those with sharp eyes, however, may have noticed a rather arcane object on display — a carved wooden statue of bald men holding up a bowl. The piece looks organic, almost primitive, and it's easy to wonder how such a thing could have anything to do with Amateur Radio. And yet, it does. The statue in question is the Elser-Mathes Cup, an award established in 1929 to commemorate the first two-way Amateur Radio contact between Earth and Mars.

## Origin of the Award

Much of what is known about the Elser-Mathes Cup can be gleaned from an article by one of the award's founders, Colonel Fred Johnson Elser, W6FB/W7OX, in the November 1969 issue of *QST*. "That Planet Mars QSO Cup" begins with a recap of the ham radio operating boom of the early 1920s: "Record after record was set, smashed, and set again. Trophy after trophy was offered, sought after, won." But in the latter part of the decade, stagnation set in. Not only did hams feel they had crossed every frontier, temporary band allocations were revoked, and new band al-

locations at 5 and  $\frac{3}{4}$  meters did not offer rip-roaring DX.

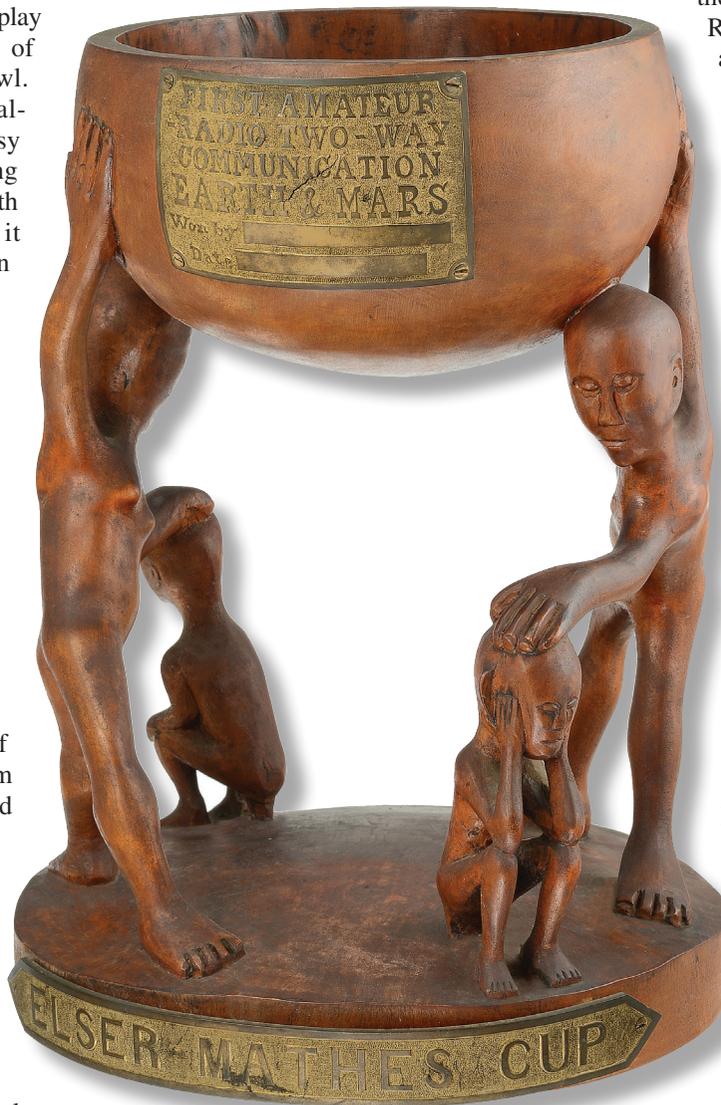
Amid this disillusionment, Elser visited ARRL Headquarters (then at its 1711 Park Street, Hartford location) and had the pleasure of meeting League co-founder and first president Hiram Percy Maxim,

whose many interests included Mars. Elser reported that Maxim even owned a globe of the planet, with all of its known features demarcated.

Elser returned to his home in Manila and befriended Stanley Mathes, a Lieutenant Commander in the Navy who had been stationed in the Philippines. Based on their shared belief that Amateur Radio technology would improve at a prodigious rate, Elser and Mathes devised an award for the most ambitious Amateur Radio contact they could imagine. In honor of Hiram Percy Maxim's love of the Red Planet, Elser and Mathes established the Elser-Mathes Cup, to be awarded for the "First Amateur Radio Two-Way Communication Earth & Mars."

## Symbolic Figures

People who have seen the cup at Headquarters (its home since 1929) often interpret the bald humanoid figures featured on the trophy as "Martians," but there is no indication that Elser or Mathes intended or encouraged this interpretation. The cup's founders selected the piece while on a trip to Baguio, Philippines. It is a woodcarving by a member of the Igorot ethnic groups that live in the Cordillera mountain range of the northern Philippines. According to Elser's own interpretation of the sculpture, "The base symbolizes Earth and the seated figures its inhabitants. The bowl is Mars and the standing men are the amateurs who bridge the gap of space."



## Bouncing Higher and Higher

It's easy to understand why the Elser-Mathes Cup is such an intriguing ham radio artifact. Humans have been fascinated by the sky since time immemorial, and hams in particular have always relished the challenge of making their signals travel as far as possible — so why not into space as well?

So, in the 87 years since the Elser-Mathes Cup was established, just how close are hams to making two-way contact between Earth and Mars? The state of the art can be summed up in one word: bounce. More and more hams are making EME (Earth-Moon-Earth) contacts, which involve bouncing your Amateur Radio signal off the surface of the Moon (hence the mode's nickname, "Moonbounce"). Once the province of only a few hams who could afford expensive equipment, EME contacts are now attainable by any ham, thanks to affordable equipment and software.

In March 2009, a German AMSAT team became the first to achieve EVE — Earth-Venus-Earth bounce — sending a 2.4 GHz CW signal more than 62 million miles. After a 5-minute delay, the team heard the signal reflected from the planet's surface.

With "Venusbounce" having been achieved, perhaps "Marsbounce" isn't far behind!

## Dreamers of the Dream

Though the prospect of an Earth-Mars-Earth bounce is exciting, such a contact would not qualify for the Elser-Mathes Cup. Fred Elser and Stanley Mathes stipulated that the contact must be two-way, and that the transmission on the Mars end of the contact cannot be generated



Vicky, SV2KBS, and Jón, TF3ZA, jump for joy in front of the Beerenberg volcano on Jan Mayen Island. While on the 2011 JX50 expedition to Jan Mayen, Vicky and Jón were reminded of the barren landscape of Mars and took the opportunity to imagine the thrill of winning the Elser-Mathes Cup. [Photo courtesy of Victoria Panagiotou, SV2KBS]

by a "robot." Until we can put a ham on Mars, the Elser-Mathes Cup will go unclaimed.

During the long wait, hams are keeping the dream alive. A 2011 blog post by Vicky, SV2KBS, gleefully reported that she and Jón, TF3ZA, had qualified for the Cup. A photo showed them leaping into the air over barren, rocky ground in front of a white mountain. In the text of her post, Vicky admitted that the mountain should be "reddish," and that it was actually the Beerenberg volcano on Jan Mayen Island — the photo had been taken during the 2011 JX50 expedition to Jan Mayen. It's clear that the spare landscape put Vicky and Jón in mind of Mars and led to their playful photo op.

In 2014, a user on the Amateur Radio Reddit (<https://www.reddit.com/r/amateurradio/>) who identified himself as christ0ph posted a link to a report entitled, *Radio Wave Propagation Handbook for*

*Communication On and Around Mars*. This 116-page report, published in 2002, was co-produced by NASA and JPL using data from 30 years' worth of Mars missions. It covers the Martian atmosphere and ionosphere, as well as how other factors, including the famous Martian dust storms, would affect propagation. Hams on the message board posited that the report could be useful to operators working toward winning the Elser-Mathes Cup.

## The Race to Mars

Outside of the ham radio community, the efforts to put humans on Mars continue apace. NASA's recent successes with the *Curiosity* rover and the discovery of water on the Red Planet bolster hopes that the agency will meet its goal of sending people there by the 2030s. You can get the latest news on NASA's progress at [www.nasa.gov/mars](http://www.nasa.gov/mars).

Alongside these efforts, some private considerations have developed programs for sending humans to Mars. SpaceX ([www.spacex.com](http://www.spacex.com)), a privately held company owned by Tesla Motors CEO Elon Musk, has big plans for getting to Mars in the 2020s. The Mars One project ([www.mars-one.com](http://www.mars-one.com)), which is currently being funded by investments and donations, is in the process of winnowing its group of 100 potential Mars colonists to an elite team of 24. Mars One hopes to launch in the 2020s as well, sending a group of four rigorously trained individuals on the one-way trip of a lifetime. If there are any Amateur Radio operators among any of the NASA, SpaceX, or Mars One landing crews, the Elser-Mathes Cup could find a home within this century!

## Ham Radio is for Everyone – Including You!

This article highlights only one aspect of Amateur Radio. Whether you're interested in electronics or technical experimentation, being of service to your community, connecting with people worldwide, or you just want reliable communication available to you at any time, Amateur Radio offers all this and much more.

Learn more! <http://www.arrrl.org/what-is-ham-radio>



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