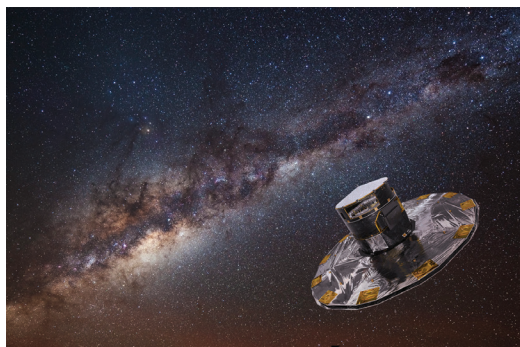




Many Canadians have rejoiced at the return of the long-form census, understanding that the information about the Canadian population acquired through the census is essential to policy-making and funding decisions. The census data, when combined with data from previous years, is also interesting from a scientific perspective. It allows us to track how the Canadian population has changed over time on both small and large scales.

Gathering large amounts of data about a population is important in the field of astronomy too, and right now there's excitement surrounding the latest stellar census – the Gaia Mission. In this census, the stars of the Milky Way are the “population” being sampled. Gaia is a successor to the Hipparcos mission that mapped over two million stars in the Milky Way Galaxy. Gaia is a project of the European Space Agency, and its objective is ambitious.



Artist's illustration (Credit: sci.esa.int)

The Gaia mission is surveying more than one billion stars in our Galaxy and beyond. Data from this astronomical census will allow astronomers to answer some fundamental questions about the formation and evolution of our Galaxy, and provide insight into many other topical areas of astronomy.¹

The Gaia satellite is a space-based telescope in orbit around the Sun at L2 (a gravitationally stable point beyond the Sun, Earth and Moon). This position gives the telescope a view of the entire night sky, which it

will map for five years. Gaia will measure the positions, colours, brightnesses, and velocities of stars, “allowing astronomers to build the most accurate three-dimensional map to date of the celestial objects in our Galaxy.”¹

The main ingredients of a star are almost always hydrogen and helium, but there can be other elements too (astronomers call these “metals”). The metallicity content of a star, along with its mass and temperature, provides information about its history, evolution, and lifespan. When this information is combined with the velocity data, we will learn a great deal about the status and evolution of stars in the Milky Way. This is why Gaia is important, and why astronomers are eager for the first data release on September 14, 2016.

The Milky Way contains approximately 100 billion stars, so in a way this stellar census has a “response rate” of only 1 percent. The latest Canadian census, in comparison, had a response rate over 98 percent.² However, considering that Canada is about 6,500 kilometres across, and the Galaxy is about 100,000,000,000,000 kilometres across, that's not bad!

1 <http://sci.esa.int/gaia/28890-objectives/>

2 <http://goo.gl/F5KIFH>









Fall Festival

MEMBERSHIP DRIVE

Programming Highlights

September 10th – 18th

Saturday, 9/10 @ 6:00 pm
Lawrence Welk: TV Treasures

Monday, 9/12 @ 9:30 pm
Summer, Surf & Beach Music We Love

Thursday, 9/15 @ 7:30 pm
Daniel O'Donnell: Stand By Me (w/ticket offer)

Sunday, 9/18 @ 7:30 pm
Inside Poldark

For the complete schedule please visit wpbstv.org