



[Center za astrofiziko in kozmologijo](#) z [Univerze v Novi Gorici](#) vabi na dve predavanji, ki bosta potekali **v sredo, 25.**

**septembra**

**2019, ob**

**14:30 in 15:15,**

v amfiteaterski predavalnici

[Fakultete za naravoslovje](#)

v Ajdovščini.

Predavanje ob 14:30 z naslovom **Skrivnostne strukture v Galaksiji zakrivajo pogled proti prvim zvezdam v vesolju (Mysterious structures in our Galaxy obscuring the view towards the first stars in the Universe)** bo imel **dr. sc.**

**Vibor Jelić**

Predavanje ob 15:15 z naslovom **Kartiranje zvezd v Galaksiji (Mapping the stars in the Milky Way)** pa bo imel **dr. sc. Lovro Palaversa**. Oba

predavatelja prihajata z Inštituta Ruđerja Boškovića v Zagrebu.

Predavanji bosta potekali v angleškem jeziku.

**Vabljeni!** Povzetka predavanj:

dr. sc. Vibor Jelić (Mysterious structures in our Galaxy obscuring the view towards the first stars in the Universe)

Recent LOFAR (Low Frequency Array) observations revealed a bewildering variety of structures in polarization in several fields at high Galactic latitudes. The structures are found at different Faraday depths, which measures the product between the electron density of the ionized gas and the line-of-sight magnetic field. One of the fields, 3C196 field, shows the most interesting features. Notably, a few degrees straight filament, which displaces in Faraday depth the background synchrotron emission. While its physical parameters are hard to pinpoint, this is likely a filament of ionized gas located somewhere within the local bubble. Together with another structure observed in the same field it correlates with observed HI filaments and the magnetic field orientation probed by the Planck observations of the dust emission in polarization. This result is quite surprising as LOFAR, Planck and HI observations are sensitive to different ISM phases. In addition, there is a conspicuous system of long and straight depolarization canals aligned with the magnetic field. During my talk I will present and discuss these intriguing results, as well as, how they might obscure the view towards the first stars in the Universe - the LOFAR-EPOCH of Reionization key science project. dr. sc. Lovro Palaversa (Mapping the stars in the Milky Way)

The data releases by the Gaia satellite are continuously improving our understanding of the Milky Way and stellar evolution. In anticipation of the Gaia Data Release 3 (GDR3, third quarter 2020) I will first give a brief introduction into the data published so far and the expectations for the GDR3. Then I will focus on three areas where multi-survey analysis that includes Gaia data can make a significant impact. First, a combination of Gaia and Low Frequency Array (LOFAR) data may allow us to follow the footprints left by stellar ionisation trails as they move through interstellar medium. Furthermore, a combination of Gaia data with the data from wide-field, time-resolved surveys allows us to improve the calibration of the usual luminosity-based distance estimators and test new distance estimation methods. Finally, the state-of-the-art

parallaxes made available by Gaia allow us to produce more accurate three-dimensional extinction maps.