

9th Quantum Universe Symposium Groningen, scientific report

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The Ninth Quantum Universe Symposium took place on April 17 and 19, 2019. The first day of the symposium consisted of 3 masterclass lectures for MSc and PhD students, the second day of a workshop with 7 keynote and invited lectures. The venue for the masterclasses was the Conferentiezaal in KVI-CART, the venue for the workshop the Zernikeborg at the Zernike Campus of the University of Groningen.

The workshop gathered a mixed company of experts from theoretical physics, particle physics, astrophysics and cosmology. The special focus of the symposium was elements, motivated by the 150th anniversary of Mendeleev's Periodic System. The topic of elements was interpreted in the broadest sense and involved aspects such as heavy nuclei, nuclear energy, nuclear fusion, neutron star equation of state, gravitational wave detection of colliding neutron stars, and longterm evolution of the planetary orbits in the solar system. A highlight of the workshop were the 3 masterclass lectures by prof. dr. C. vandenBroeck (VSI, Groningen) on gravitation waves, prof. dr. M. Mendez (Kapteyn Astron. Inst.) on neutron star matter and prof. dr. S. Sarkar on Big Bang nucleosynthesis. Prof. Sarkar also took care of a keynote lecture on the cosmological ${}^6\text{Li}$ problem. The other 5 invited/keynote lectures were by prof. dr. S. Nissanke (UvA) on the gravitational wave detection of colliding neutron stars, dr. J. Even (KVI-CART) on superheavy elements, prof. J. Pochodzalla (Univ. Mainz) on hypernuclei, prof. S. Brandenburg on prospects for nuclear power, dr. T. Morgan (DIFFER, Univ. Eindhoven) on nuclear fusion, and prof. J. Laskar (CNRS, Obs. de Paris) on the chaotic motion of the solar system.

Also for 2020 we have started the organization of a QU10 meeting along the same lines, with a day with a series of masterclass lectures and a scientific workshop.