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# Fundamental physics with an Optical Clock Orbiting in Space: FOCOS

The FOCOS mission will perform precise time and frequency comparisons between a high-stability optical clock in an elliptical orbit and ground optical clocks via a high-performance free-space optical link. The high frequency stability of an orbiting clock allows an improved measurement of the gravitational redshift by a factor of 30,000, precise worldwide time transfer, and searches for dark matter and time variations of fundamental constants with a global network of clocks.

**Authors:** DEREVIANKO, Andrei (University of Nevada, Reno); GIBBLE, Kurt (The Pennsylvania State University); HOLLBERG, Leo; Dr NEWBURY, Nathan (NIST); Prof. SAFRONOVA, Marianna (U. of Delaware); Dr SINCLAIR, Laura (NIST); Dr YU, Nan (JPL, CalTech)

**Presenter:** DEREVIANKO, Andrei (University of Nevada, Reno)

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