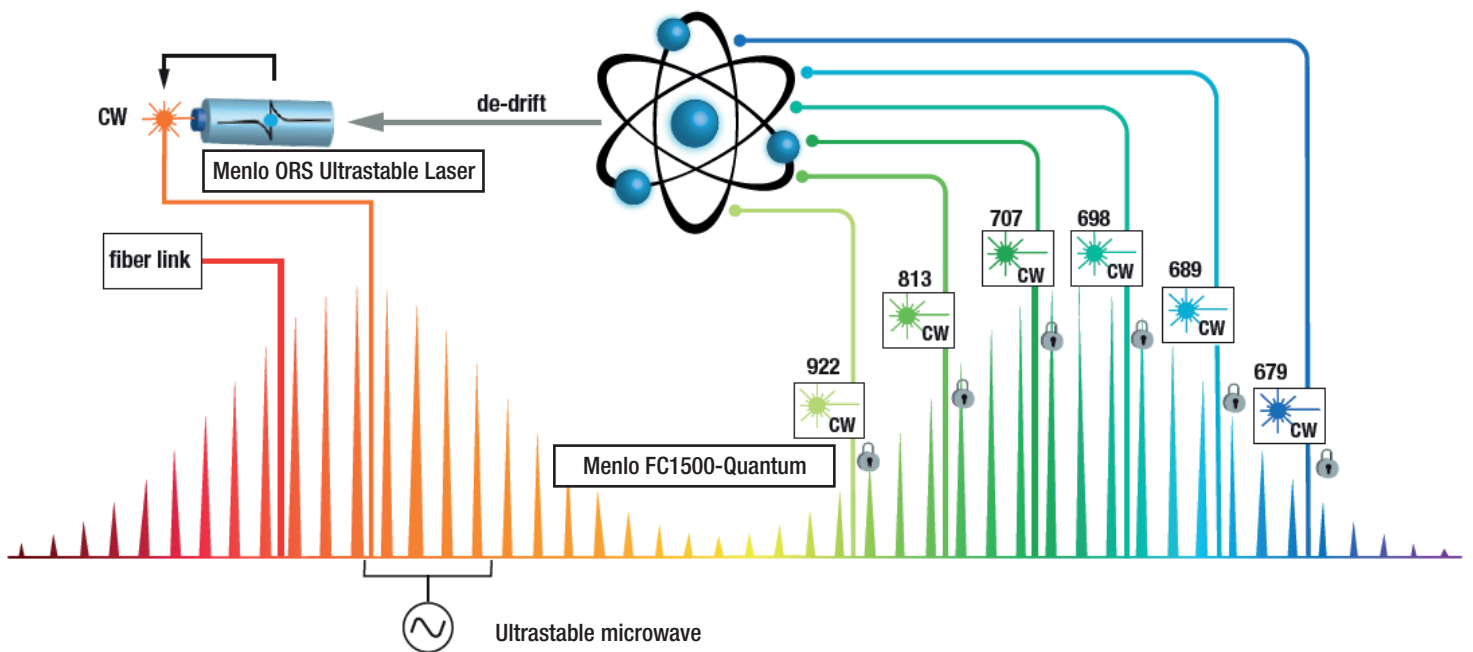
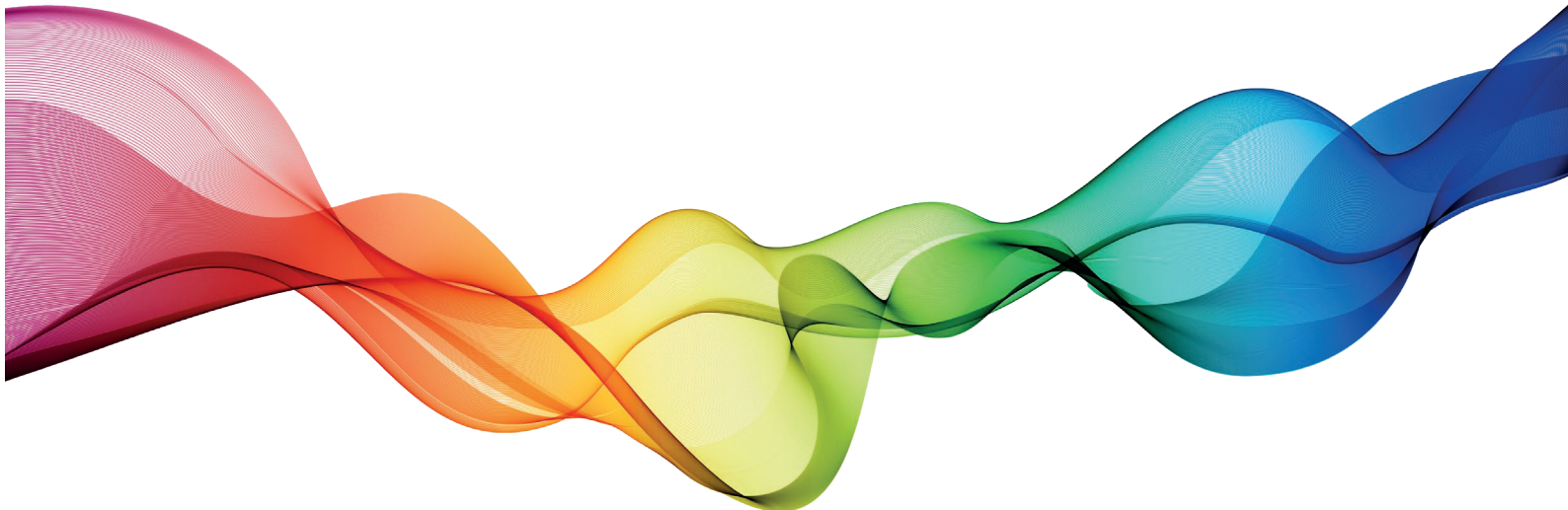


Everything but the atomic reference

SOLUTIONS FOR OPTICAL CLOCKS AND QUANTUM COMPUTING

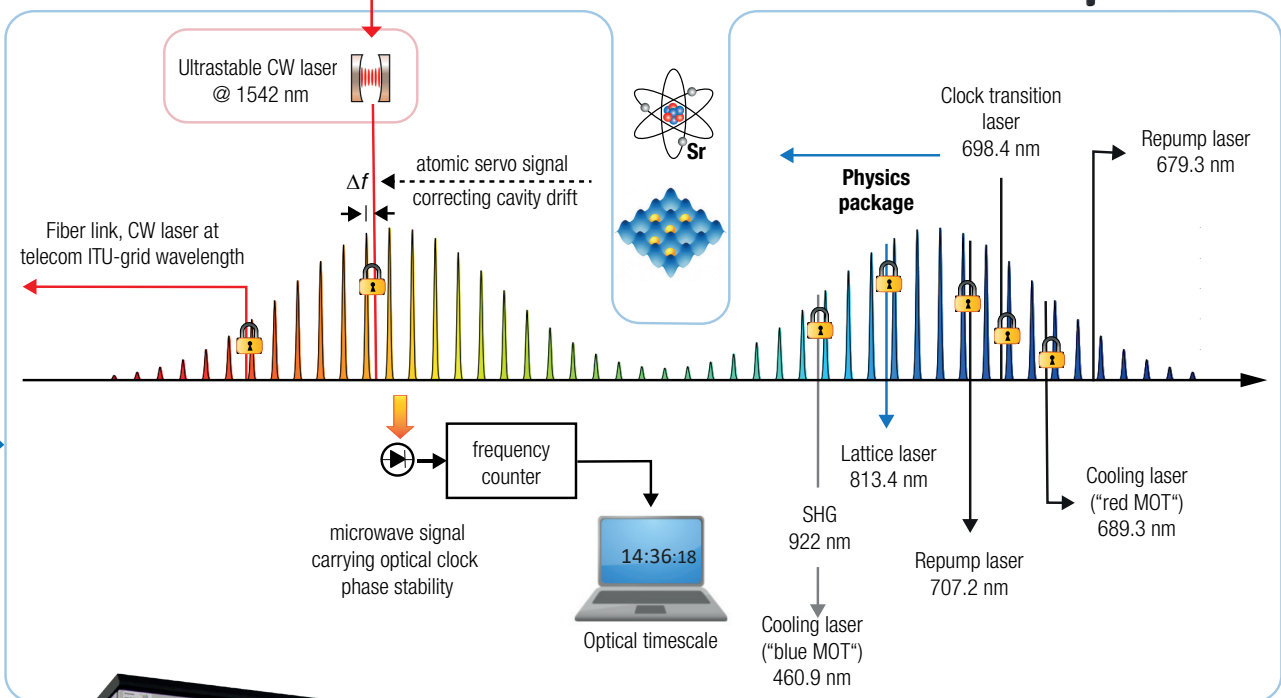
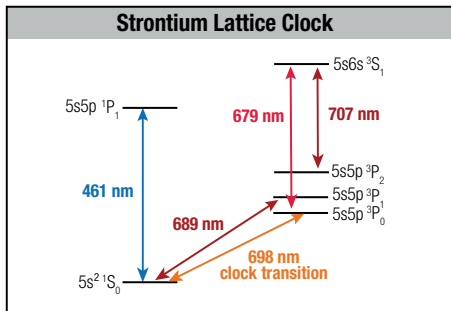


Ultra low-noise solutions for listening to the universe



SR OPTICAL LATTICE CLOCK

ORS Ultrastable Laser:
The perfect optical reference

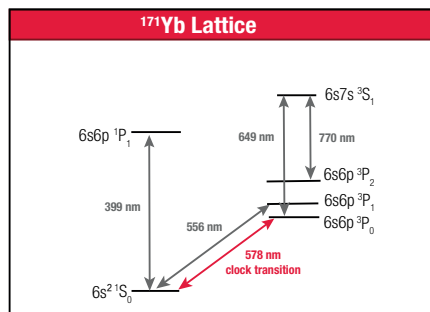
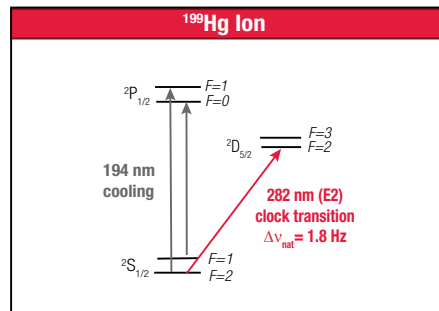
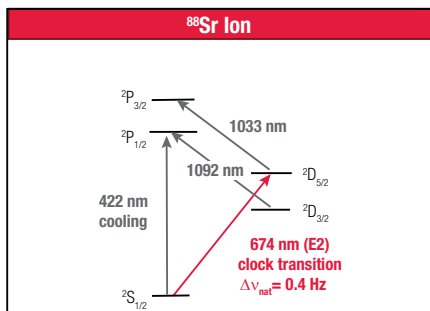
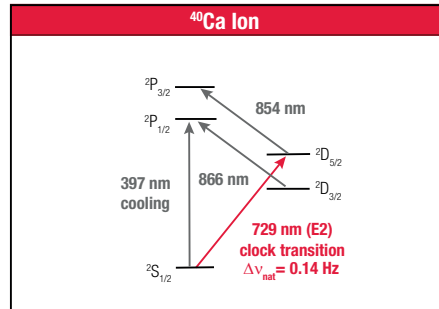
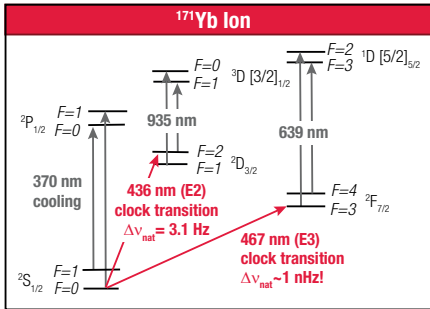


FC1500-Quantum:
The perfect clockwork

- Fully integrated
- User ready
- Academia and industry proven
- Focus your work on the physics package

WHATEVER YOUR NEEDS!

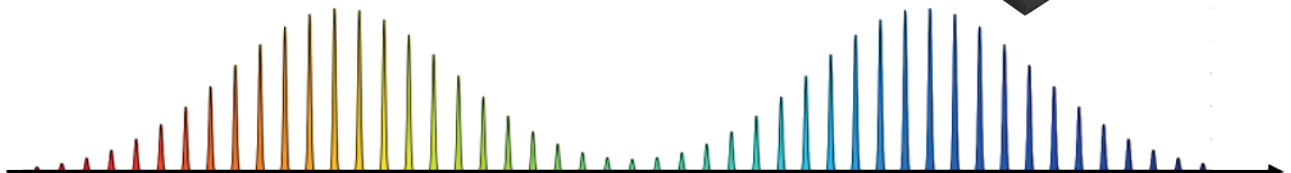
Clocks, Computers and Sensors



...and whatever else you can imagine

Supercontinuum Module: broadband extension unit

- 670-1700 nm continuous spectrum
- Absolute flexibility to lock anywhere
- Up to 8 wavelengths locked to a single module
- Upgradeable in the field as your needs evolve

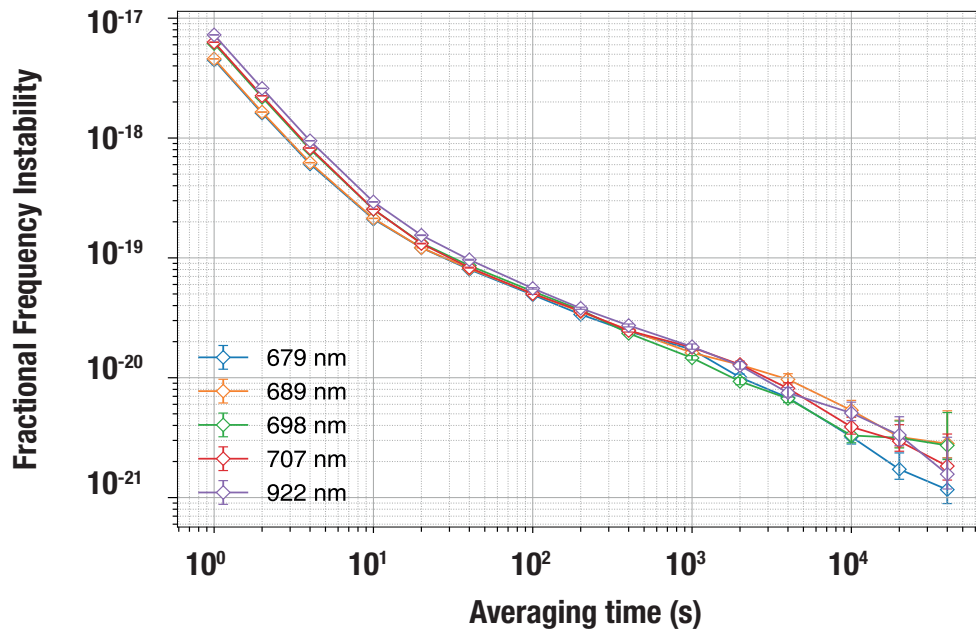


High-Power Measurement Port: extension units

- UV 390-400 nm
- visible and near infrared
- Optimized for your requirements

HOW GOOD IS YOUR LOCK?

Phase-Lock Stability of Five Frequency Combs-Disciplined CW Lasers



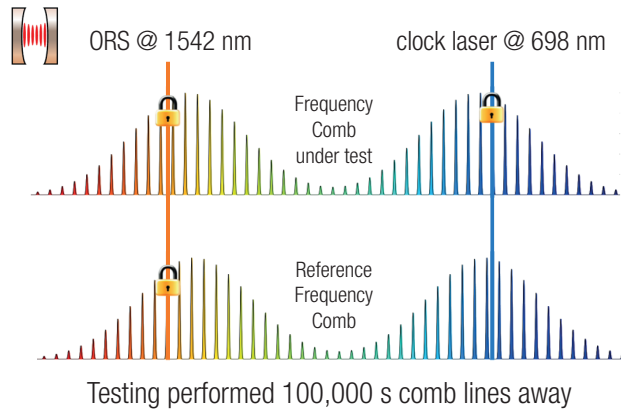
The measurement spans a continuous 2-day period with no observed cycle-slips, no loss of phase coherence — a level of performance unmatched in the market. Data was acquired using a Lambda counter, with modified Allan deviation analysis, gate time in seconds, and pre-filtering via a 1 MHz band-pass filter.



HOW GOOD IS YOUR FREQUENCY COMB?

Menlo sets the gold standard for frequency comb qualification and quality!

Out-of-loop comb-comb comparison

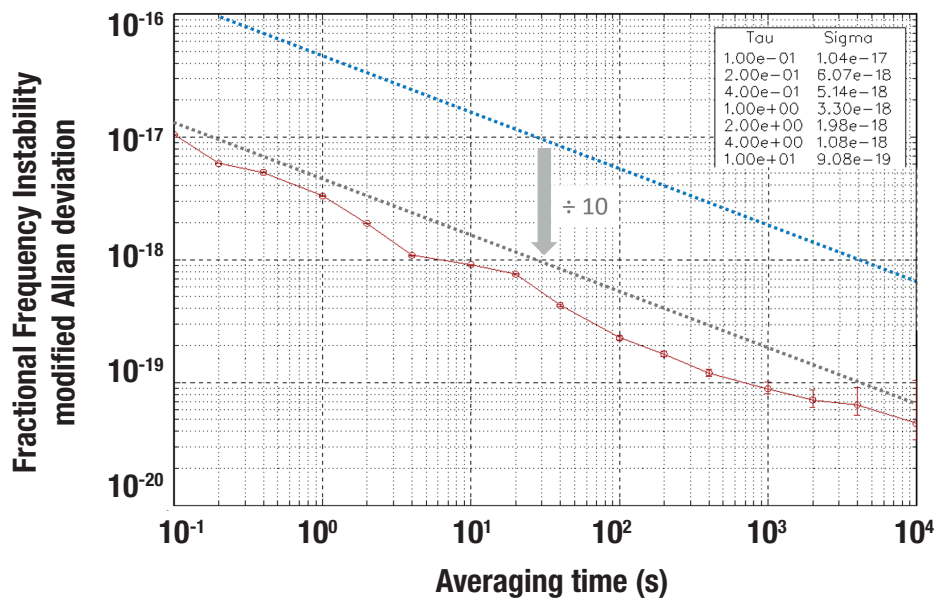


Residual comb instability approx. 1 order of magnitude lower than the most stable Sr lattice clock reported to date

Ultra-low phase noise across entire spectrum:

- Octave spanning spectral purity transfer

Enabling: Frequency Comb Stability



State of the art optical lattice clocks
Nature Photonics vol. 13, p. 714–719 (2019)
 J. Ye et al., JILA
 “... Consequently, the frequency comb is not a significant source of instability....”

Menlo Systems FC1500-Quantum
 Comb-comb comparison @ 698 nm

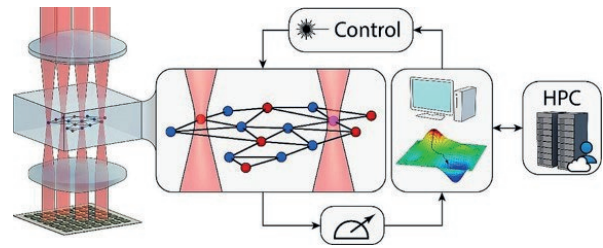
WHERE CAN YOU FIND MENLO?

In Science – As trusted industry partners in cutting-edge R&D projects, we drive innovation forward.

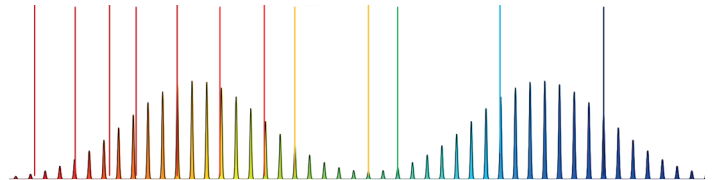
Rymax

- 500 neutral Yb atoms in programmable optical tweezer lattices
- Rydberg states of Yb for large-scale qubit entanglement

Sub-Hz Menlo frequency comb to reference all lasers simultaneously



Every laser perfectly locked!



In Industry – As a proud supplier to our OEM integrators, our technology powers next-generation solutions.

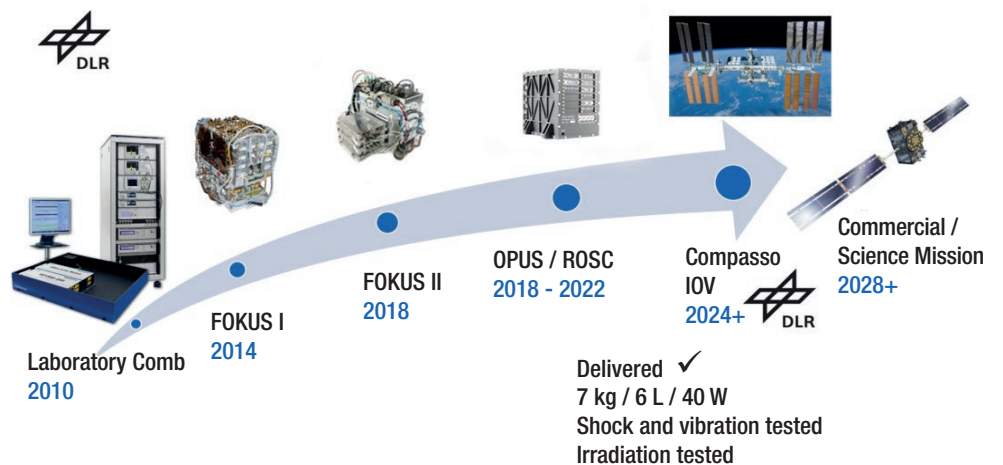


- Quantum computing with Sr
- Qubit encoded in two nuclear spin states of single ^{87}Sr atom, atoms in array of optical tweezers
- Wavelengths: 461 nm, 689 nm, 813 nm, 698 nm, 671 nm, 679 nm, 707 nm, 319 nm
- Cooling, trapping, individual atom manipulation, and read out the spin state of the qubits

In Space – Our technology is deployed in space missions that power the future of space exploration

The COMPASSO (Compact Optical Clocks and Accelerators for Space Science Operations) project aims to test and qualify advanced optical technologies for future satellite navigation systems

- Vibration insensitive
- Irradiation tested
- Sounding rocket
- Miniturized comb package



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