

## Milestones of Quantum Technology II

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21.4. Kick-off.

### Concepts

28.4. *Indistinguishable photons from a single-photon device*, C. Santori, et al., *Nature* **419**, 594 (2002) (Janik)

5.5. *Experimental quantum teleportation*, Dirk Bouwmeester, Jian-Wei Pan, Klaus Mattle, Manfred Eibl, Harald Weinfurter and Anton Zeilinger  
[Nature 390, 575 \(1997\)](#) (Sven)

12.5. *Experimental one-way quantum computing*, P. Walther, K. J. Resch, T. Rudolph, E. Schenck, H. Weinfurter, V. Vedral, M. Aspelmeyer & A. Zeilinger (Tim)

19.5. *Resource-efficient linear optical quantum computation*, Daniel E. Browne and Terry Rudolph, *Phys. Rev. Lett.* **95**, 010501 (2005) (Janik)

26.5. *Measurement of the quantum states of squeezed light*, G. Breitenbach, S. Schiller & J. Mlynek. *Nature* **387**, 471 (1997) (Janik)

### Applications

2.6. *A gravitational wave observatory operating beyond the quantum shot-noise limit*, [The LIGO Scientific Collaboration](#), *Nature Physics* **7**, 962 (2011) (Sven)

9.6. *Quantum computational advantage using photons*, H.-S. Zhong et al. *Science*, **370**, 1460 (2020) (Sven)

16.6. *Quantum imaging with undetected photons*, Gabriela Barreto Lemos, Victoria Borish, Garrett D. Cole, Sven Ramelow, Radek Lapkiewicz and Anton Zeilinger,  
[Nature 512, 409 \(2014\)](#) (Sven)

### Implementations

23.6. *Single-Atom Single-Photon Quantum Interface*, Tatjana Wilk, Simon C. Webster, Axel Kuhn, Gerhard Rempe, *Science*, **317**, 488 (2007) (Tim)

30.6. *Heralded entanglement between solid-state qubits separated by three metres*. H. Bernien et al., *Nature* **498**, 86 (2013) (Tim)

7.7. *Sequential generation of linear cluster states from a single photon emitter*, D. Istrati, et al., *Nature Communications* **11**, 5501 (2020).  
(Tim)

14.7. *Quantum supremacy using a programmable superconducting processor*. F. Arute, et al., *Nature* **574**, 505 (2019) (Janik)