Title:	The evolving radio jet from the neutron star X-ray binary 4U 1820-30.
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Abstract:	The persistently bright ultracompact neutron star low-mass X-ray binary 4U 1820−30 displays an ∼170 d accretion cycle, evolving between phases of high and low X-ray modes, where the 3–10 keV X-ray flux changes by a factor of up to ≈8. The source is generally in a soft X-ray spectral state, but may transition to a harder state in the low X-ray mode. Here, we present new and archival radio observations of 4U 1820−30 during its high and low X-ray modes. For radio observations taken within a low mode, we observed a flat radio spectrum consistent with 4U 1820−30 launching a compact radio jet. However, during the high X-ray modes the compact jet was quenched and the radio spectrum was steep, consistent with optically thin synchrotron emission. The jet emission appeared to transition at an X-ray luminosity of LX(3−10keV)∼3.5×1037(D/7.6kpc)2 erg s−1. We also find that the low-state radio spectrum appeared consistent regardless of X-ray hardness, implying a connection between jet quenching and mass accretion rate in 4U 1820−30, possibly related to the properties of the inner accretion disc or boundary layer.
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