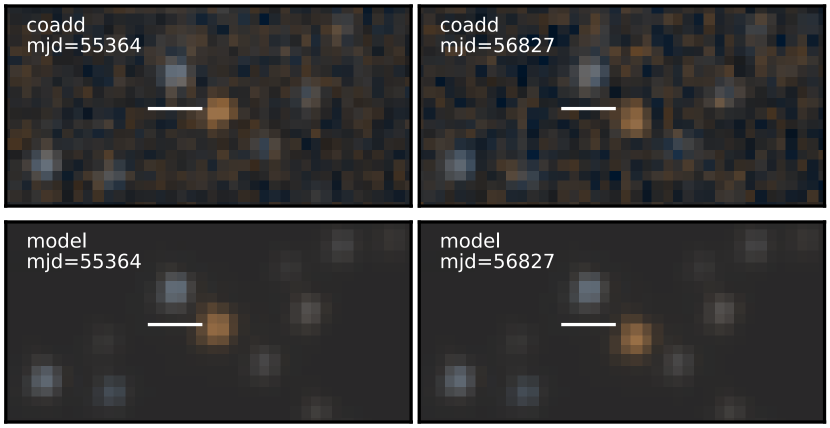

Figure 4: Example of a faint T4 dwarf with motion detected via our forced photometry image modeling approach. Top: $W1/W2$ composite images at two epochs spaced 4.5 years apart. Bottom: corresponding best-fit forced photometry models at both epochs. Combining four epochs and both bands, this object's motion is detected at $>10\sigma$ significance.

NEOWISE-R exposures with only modest code development effort. Detailed characterization of the PSF will be necessary on each time slice of the data to accurately model subtle changes over the mission. Deriving time-dependent photometric calibration parameters to account for instrument drifts and differences in the Level 1b processing will also be necessary to reach the error floor in precision for time-varying photometry. Additional exploratory analyses will determine whether any unexpected features or artifacts are newly introduced in the second-year *NEOWISE-R* data. The survey poles (near the ecliptic poles) will require special attention to determine precisely how best to create time-resolved coadds, as those observations do not fit nicely into short visits at six month intervals.

4.2 Running at scale

The computations will be run at the NERSC supercomputer center. The PI and Co-Is are active and experienced NERSC users. Lang (2014) and Meisner et al. (2016) successfully generated the existing unWISE coadds on NERSC. The full analysis of time-resolved coadds using 37 months of data and *Tractor* forced photometry is estimated to fit within 1 M CPU-hours of an existing computing allocation.