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MODELING SHORT TERM PERSISTENCE IN WFC3

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CONTEXT

WFC3/IR, like other HgCdTe detectors, when exposed to high light levels, shows a signal that can be detected hours to days afterwards: **persistence**.

TRAP & RELEASE MECHANISM

Persistence is related to traps (impurities) in the depletion region (Smith+08).

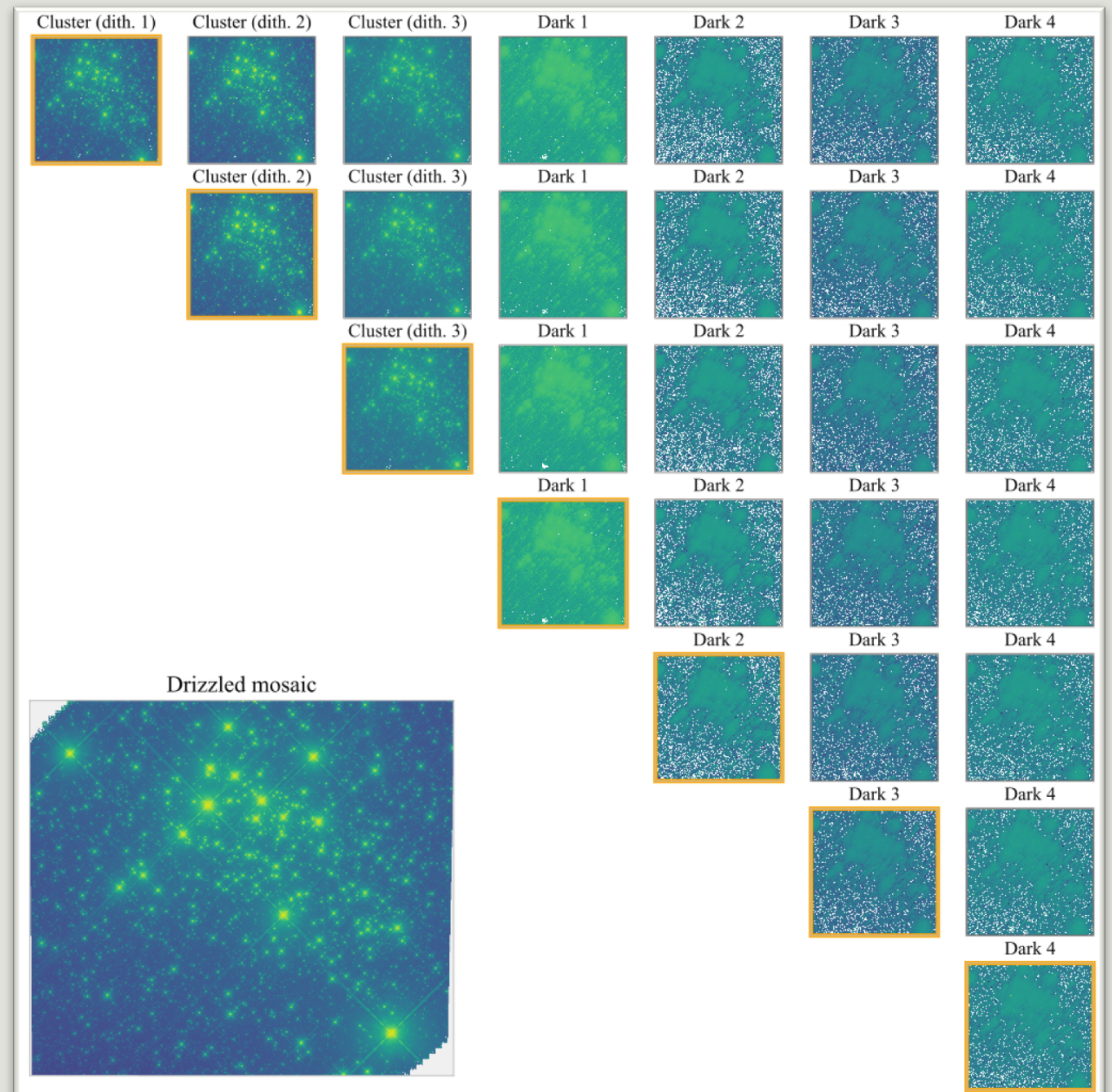
MOTIVATION

Persistence in WFC3/IR has been studied at times larger than few 100s seconds, where it behaves like a power law.

- ❑ Need of better physical understanding
- ❑ Important for same-orbit persistence and exoplanet transit studies

NEW DATA

Observations of Westerlund 1: 3 sets of dithered exposures followed by darks



RESULTS

Persistence increases with increasing stimuli

Persistence behaves as a power law for times as short as 70s after the end of the stimulus.

For the lowest stimuli (note: this is still above saturation) some departure from a simple power law may exist, but we are still investigating.

