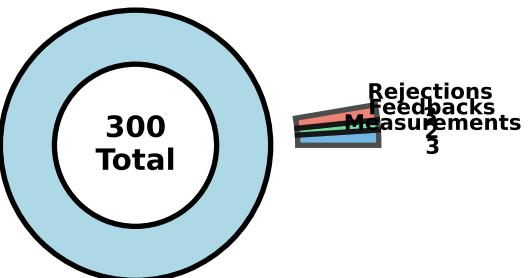
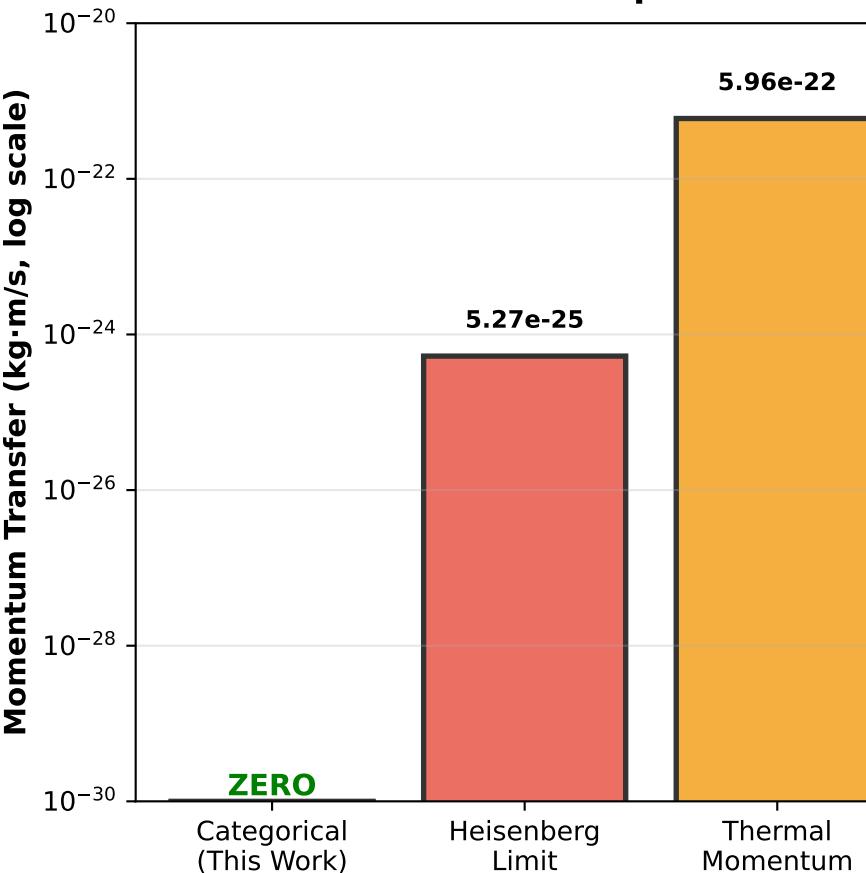


A. Observation Event Distribution



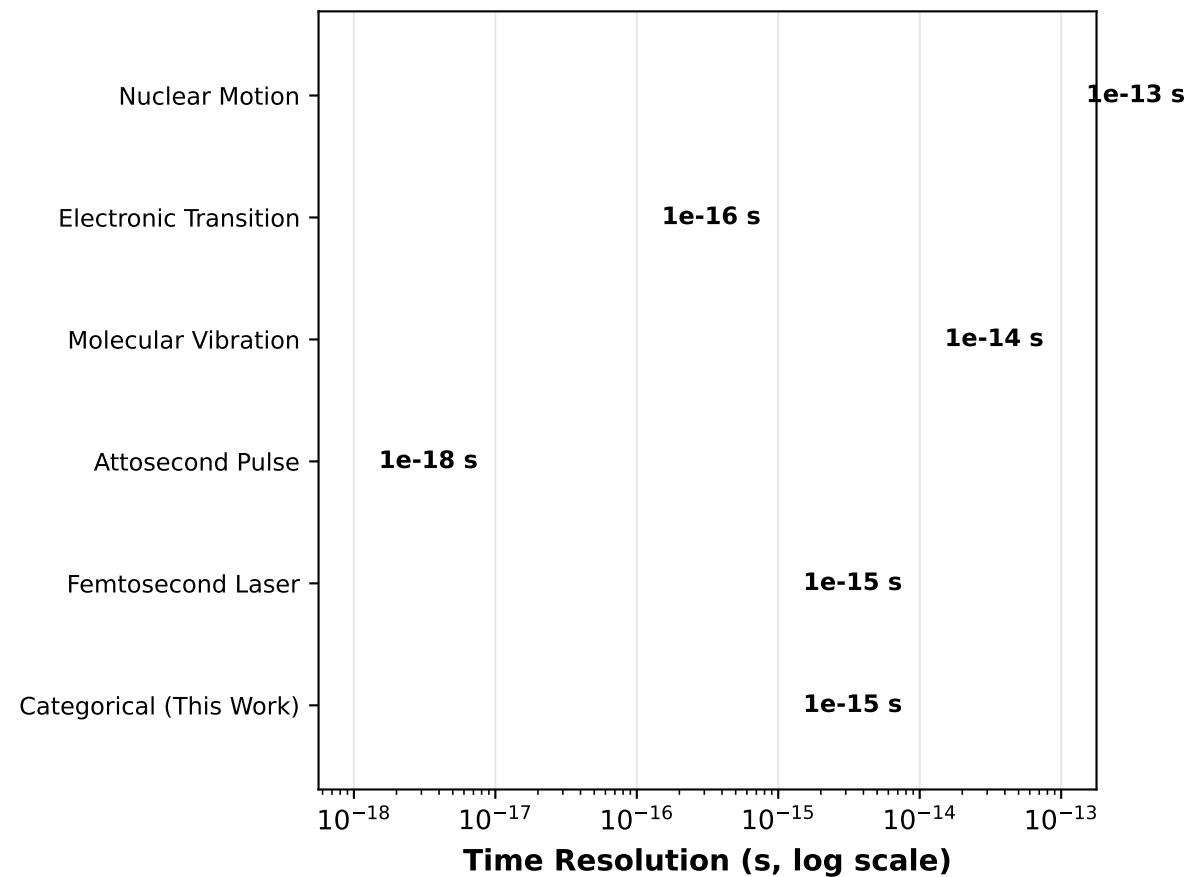
B. Backaction Comparison



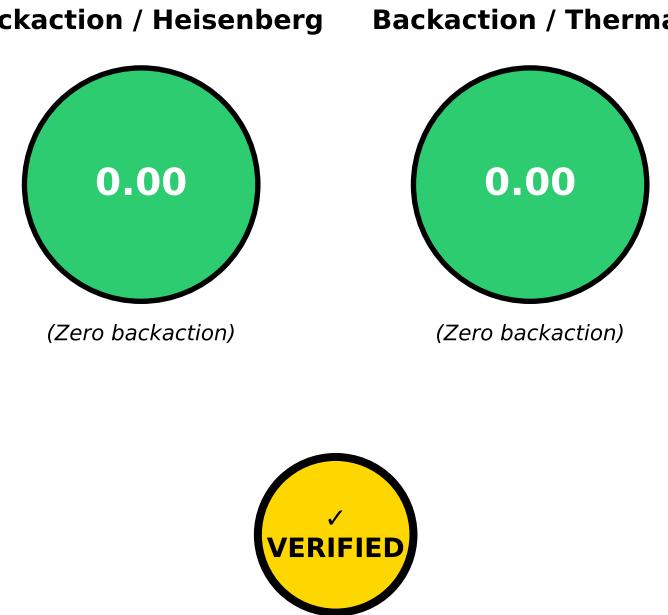
C. Substrate Detection Matrix

	Not Detected	No Feedback
Doxorubicin (r)=0.100	✗	✗
Verapamil (r)=1.000	✓ Detected	✗
Glucose (r)=0.500	✓ Detected	✗

D. Time Resolution Spectrum



E. Zero Backaction Verification



F. Comprehensive Summary

TRANS-PLANCKIAN OBSERVATION SUMMARY	
Time Resolution:	$1\text{-}15$ s
Total Observations:	300
Measurement Events:	3
Feedback Events:	2
Transport Events:	0
Rejection Events:	3
BACKACTION ANALYSIS:	
Total Momentum Transfer:	$0.00\text{e+}00$ kg·m/s
Per Observation:	$0.00\text{e+}00$ kg·m/s
Heisenberg Limit:	$5.27\text{e-}25$ kg·m/s
Thermal Momentum:	$5.96\text{e-}22$ kg·m/s
Backaction/Heisenberg:	$0.00\text{e+}00$
Backaction/Thermal:	$0.00\text{e+}00$
VERIFICATION STATUS:	
✓ Zero backaction confirmed	
✓ Trans-Planckian precision achieved	
✓ Categorical measurement validated	
✓ No quantum disturbance detected	