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SAND2017-3947R

Sandia National Laboratories

A0623 shot series – ZAPP series
Ride-along data LOS 130, LOS 170 and LOS 330
shots z3053, z3054, z3055

P.I.s: J.E. Bailey, G. P. Loisel, 1683

Requesting unlimited release to:

West Virginia University collaborators (LOS130, 170):

Mark Koepke (professor, advisor), Ted Lane (graduate student), Matt Flaugh (graduate student)

University of Nevada, Reno collaborators (LOS 330):

Roberto Mancini (professor, advisor), Dan Mayes (graduate student)

U.S. DEPARTMENT OF ENERGY | NNSA National Nuclear Security Administration

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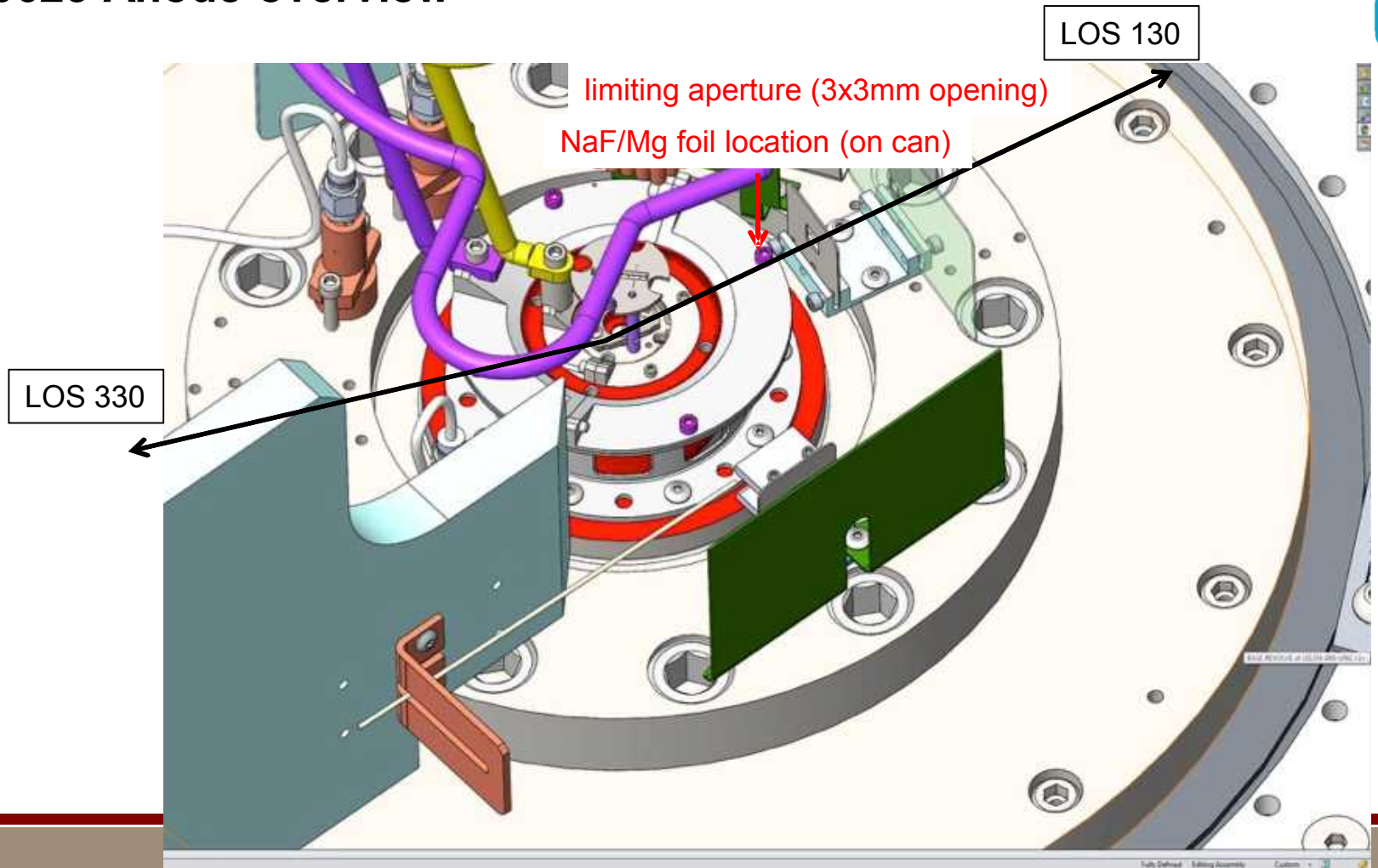
Each instrument record the x-ray emission from the Z-pinch dynamic hohlraum (ZPDH):
- LOS 130: TIXTLs instruments record the absorption of the pinch backlighter through an expanding NaF/Mg foil.
- LOS 170: MLM L & R instruments record monochromatic images at 276 and 528 eV energies resp. near and before Z-pinch stagnation, MLMC record >1keV filtered images.
- LOS 330: TREX instruments record the absorption of the pinch backlighter through a heated Ne gas, time resolved about the Z-pinch x-ray peak.

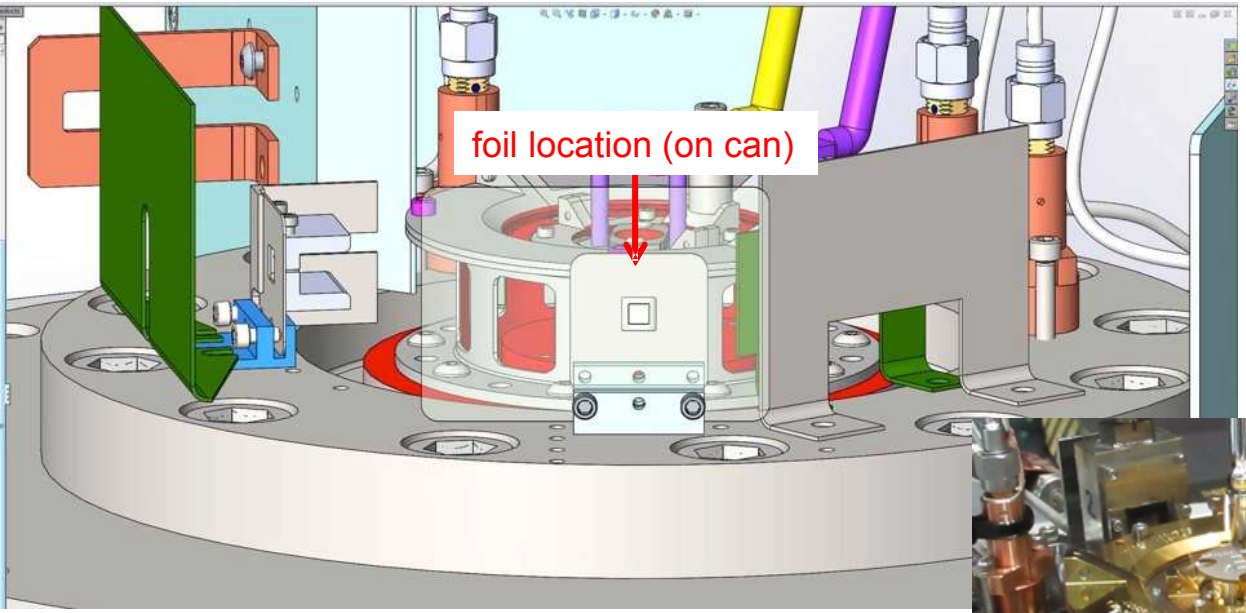
Effective shot sequence:

	z3053	z3054	z3055
LOS 130 tixtls RL,RR KAP and RAP crystals, spectral range 6-18Å	NaF/Mg foil 15µm CH tamping placed on can.	NaF/Mg foil 8µm CH tamping placed on can.	Not for release, measurement for G. Loisel
LOS 170 MLM 277eV and 528eV color imaging	Z- pinch dynamic hohlraum	Z- pinch dynamic hohlraum	Z- pinch dynamic hohlraum
LOS 330 TREX spectral range 7-14Å	Neon cell no gas - Null test	Ne gas cell – 30 torr	Ne gas cell – 15 torr

A0623 Anode overview

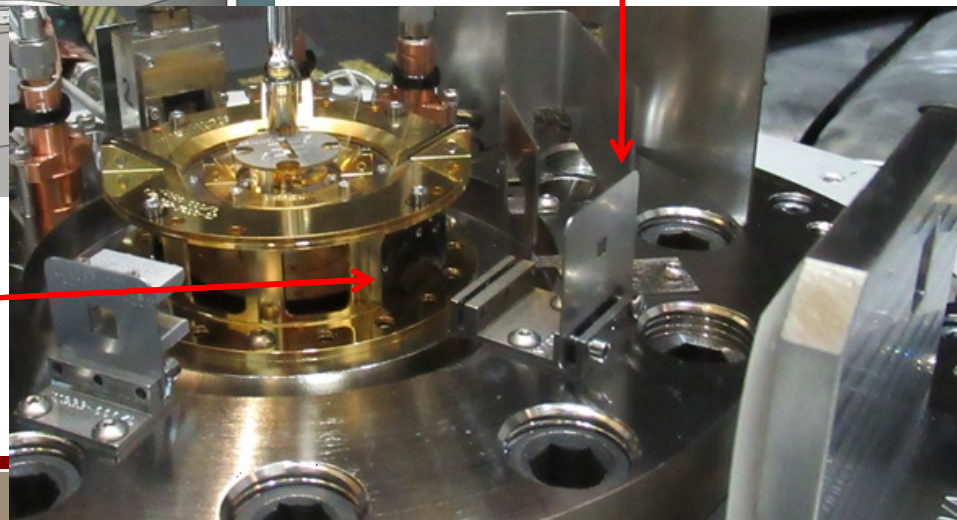


LOS 130, 12º LOS diagnostic view



Limiting aperture

NaF/Mg foil on can
before shot



LOS 330, Ne gas cell shown on load

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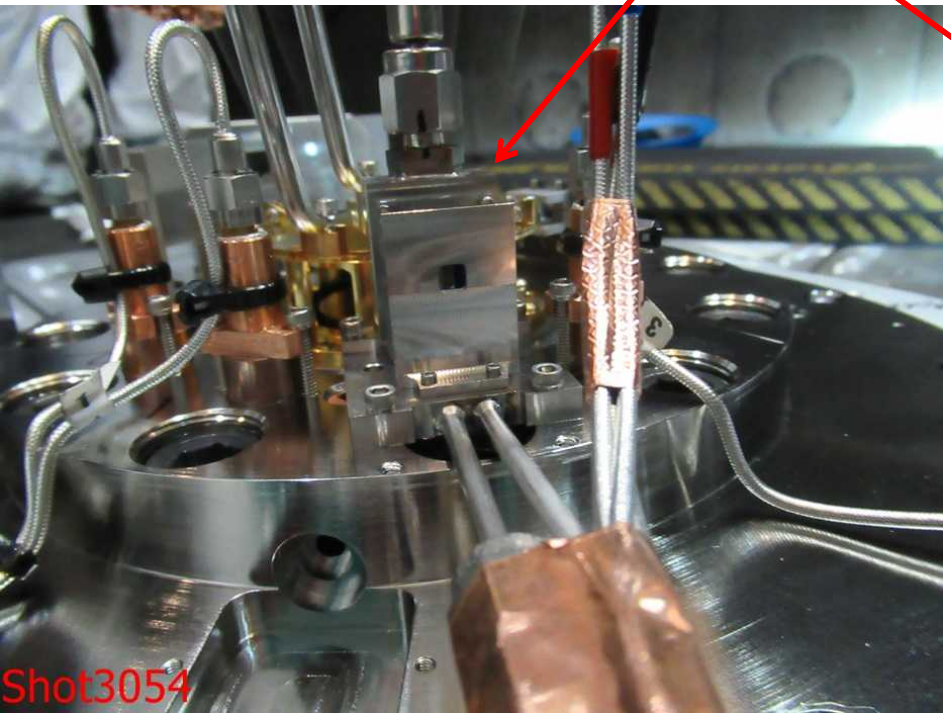
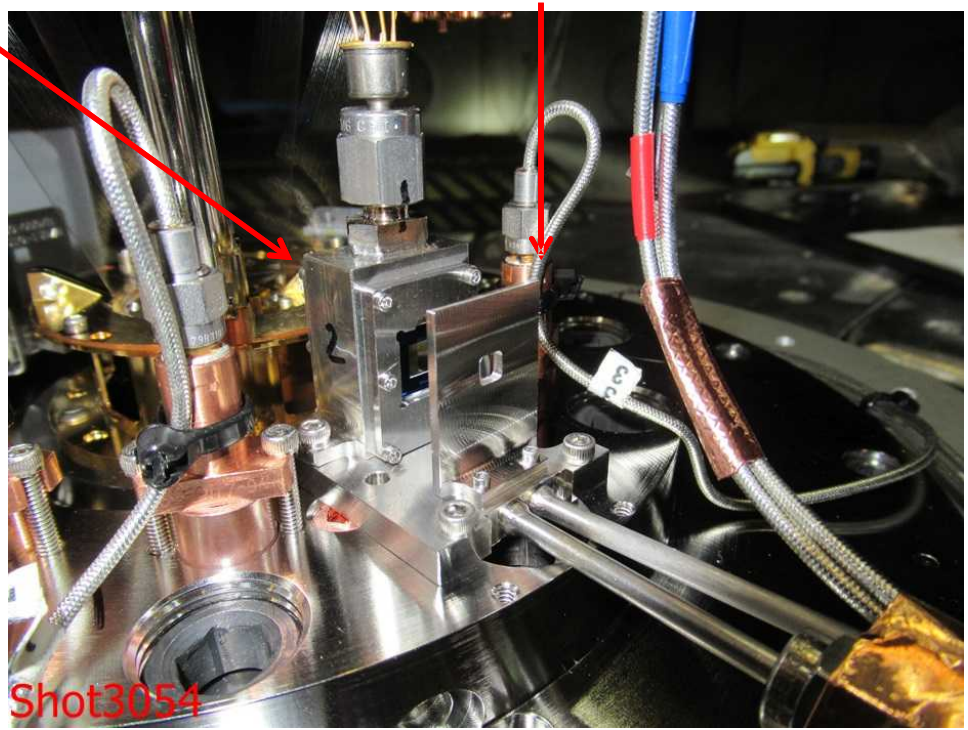
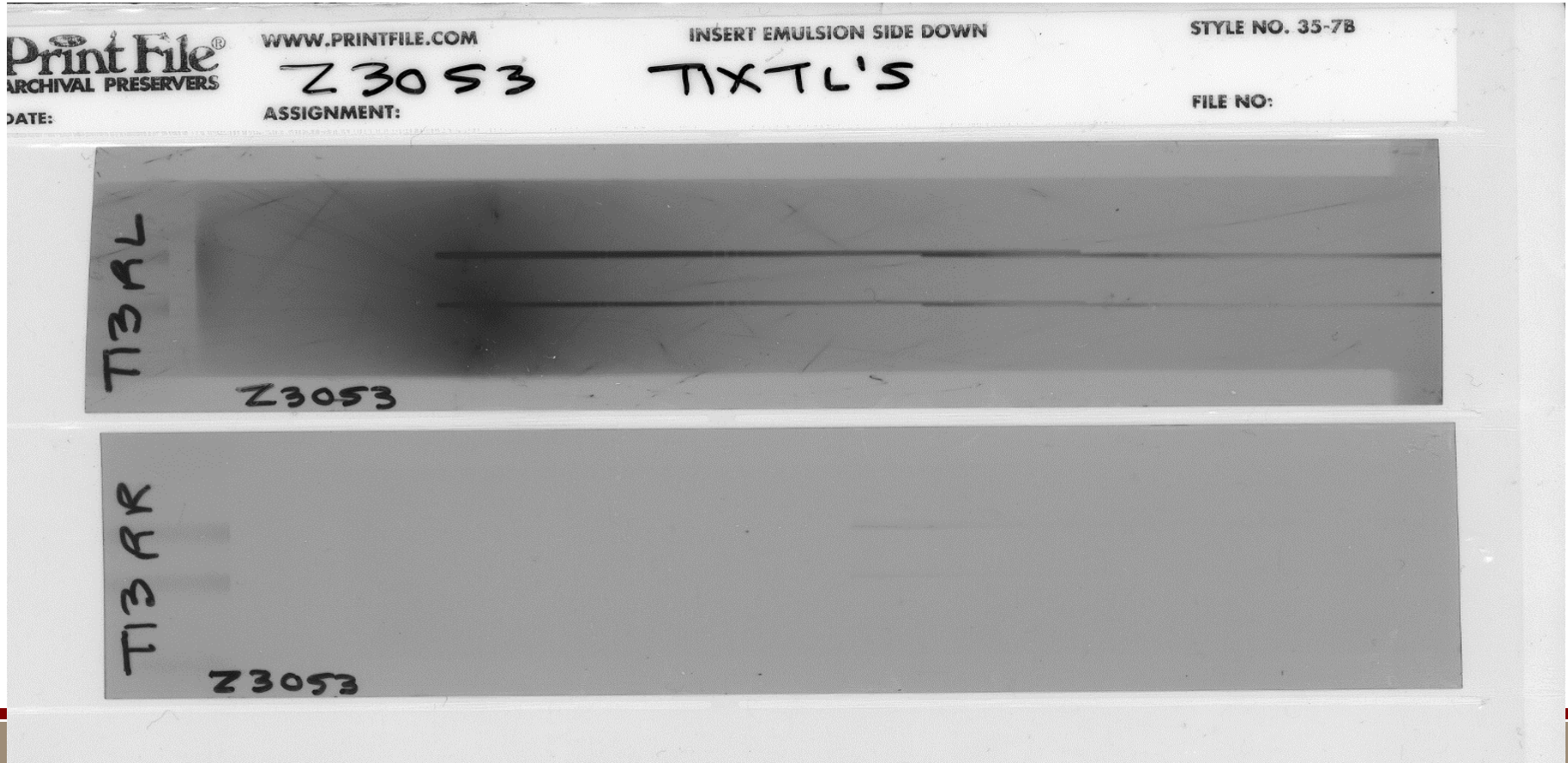
gas cell



Limiting aperture

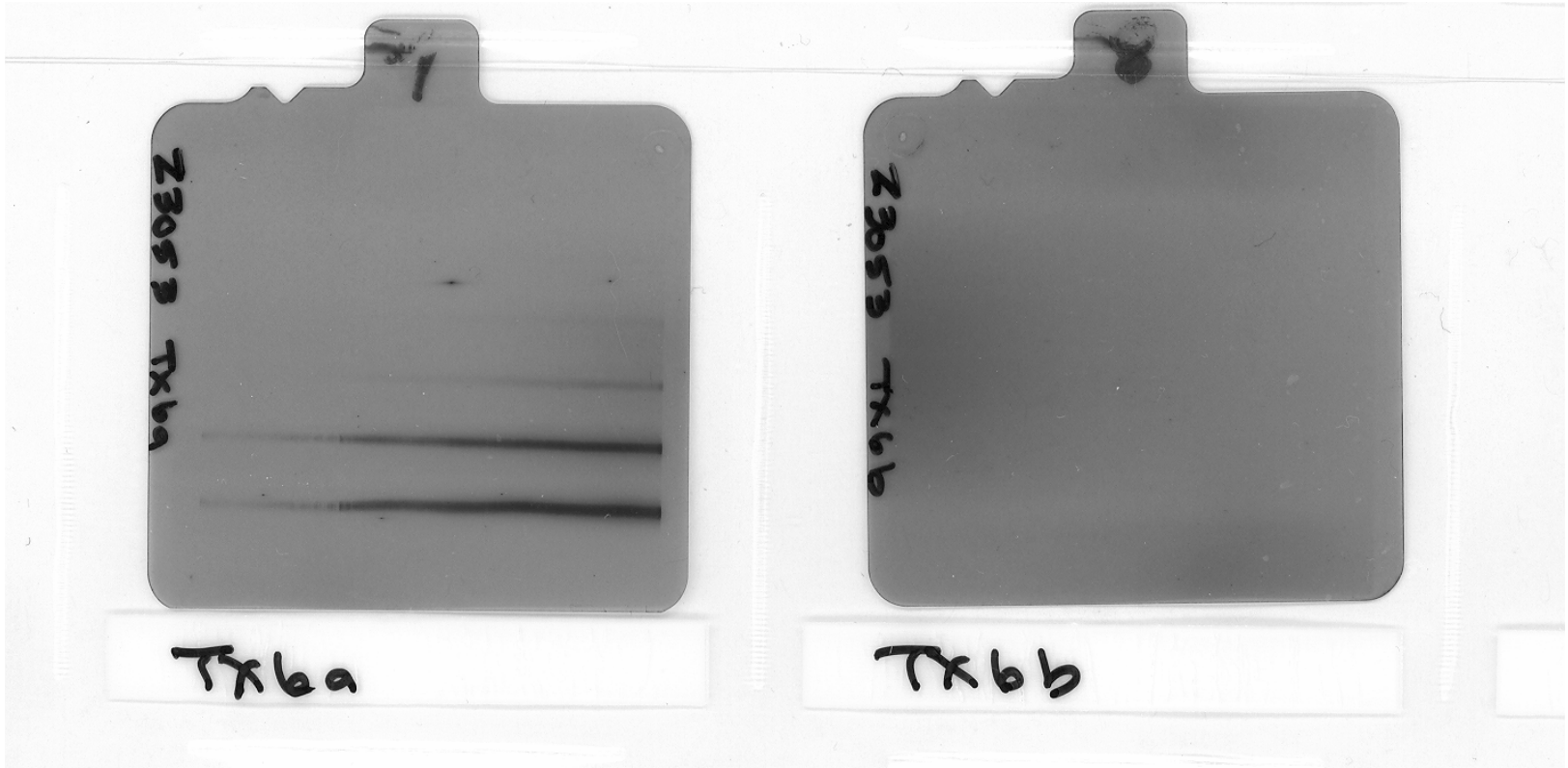


z3053 – LOS130
TIXTL RL
TIXTL RR

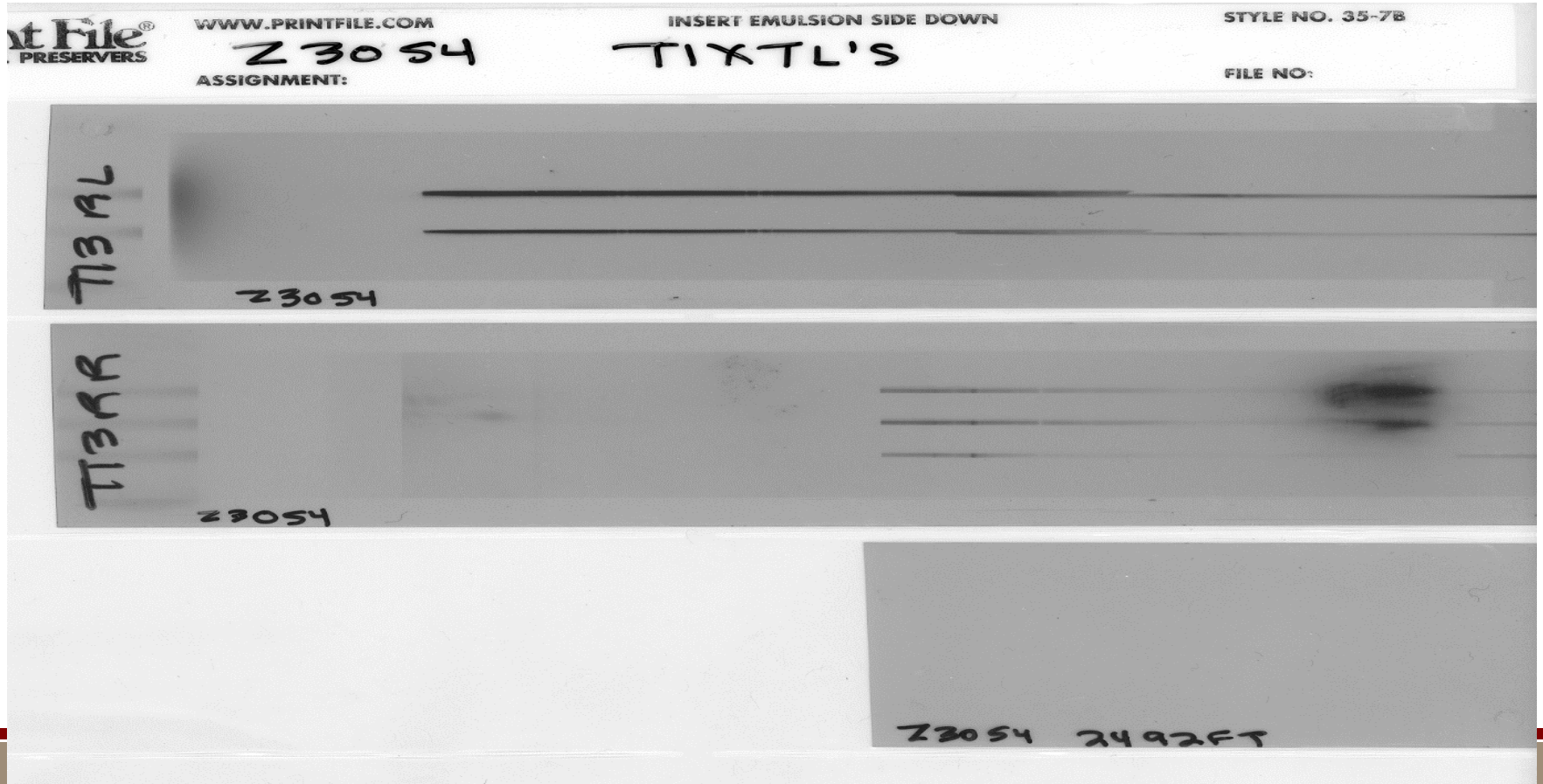


z3053 – LOS170
MLM R
MLM L
MLM C

z3053 – LOS330
TREX6A – TREX6B

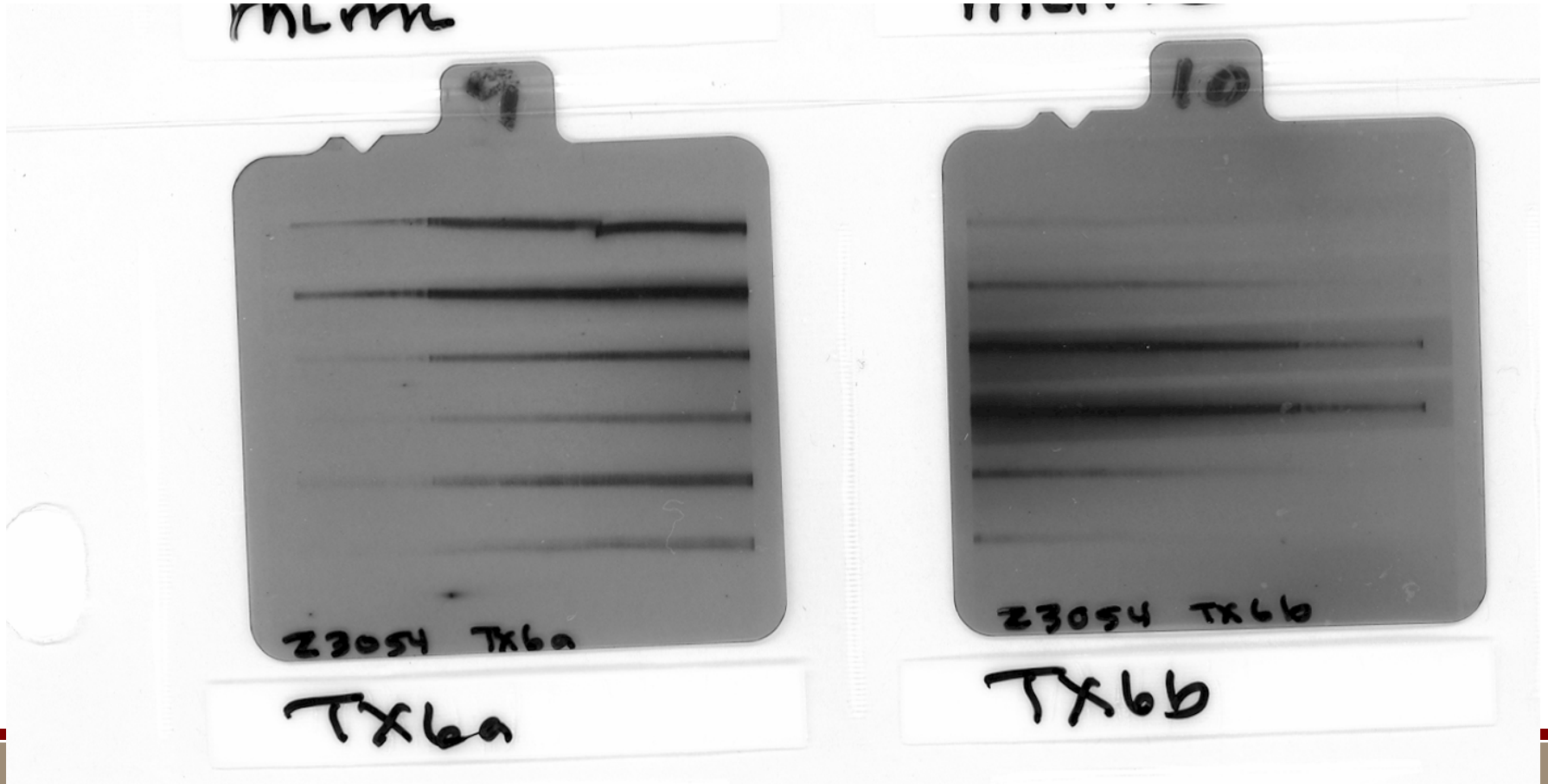


z3054 – LOS130
TIXTL RL
TIXTL RR



z3054 – LOS170
MLM R
MLM L
MLM C

z3054 – LOS330
TREX6A – TREX6B



z3055 – LOS170
MLM R
MLM L
MLM C

z3055 – LOS330
TREX6A – TREX6B