

MERIT Systems Tests at MIT

Integration of Magnet and Mercury Delivery Systems

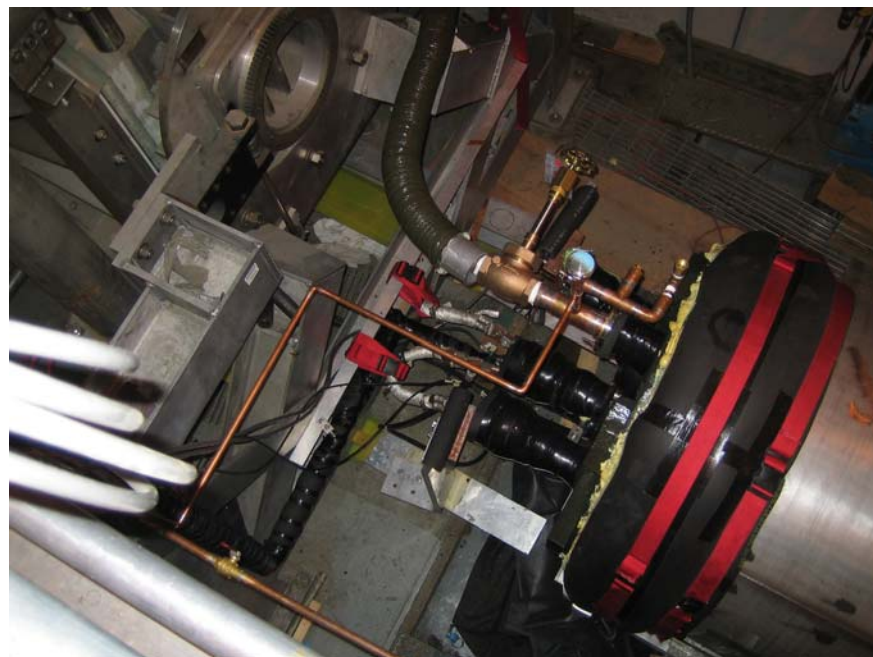
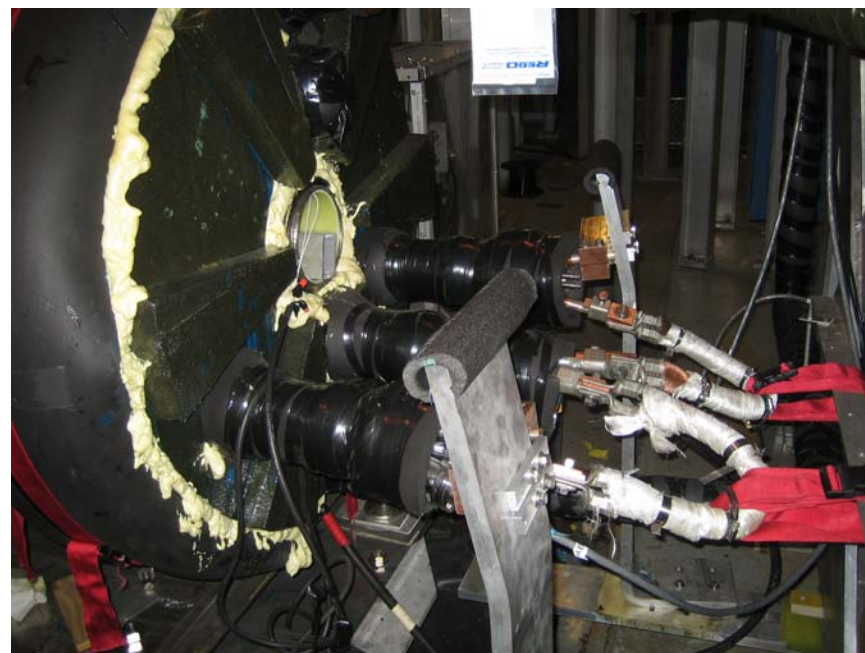
K. McDonald

For the MERIT Collaboration

March 9, 2007

Week of Feb 19

Magnet connected
to power supplies
and LN2 system



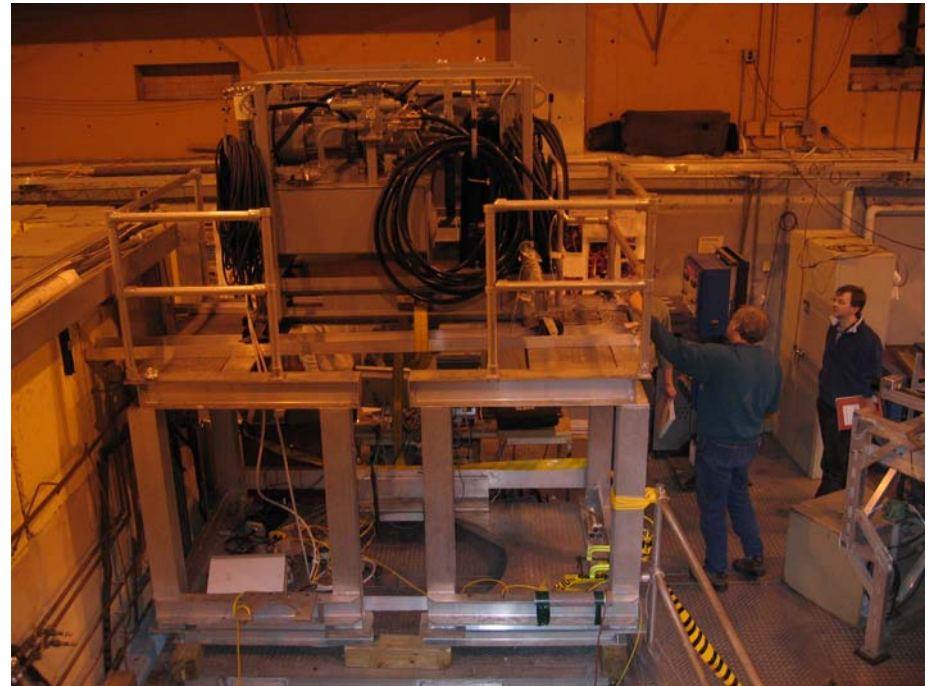
Monday, Feb 26

Mercury system unpacked
after shipment from
ORNL



Tuesday, Feb 28

Mercury system installed
in the pit.



Wed, Feb 28

Mercury lowered into pit

Secondary containment
opened so that fiberoptic
cables can be connected



Thu Mar 1

Mercury loaded into primary.

Tiny drops of mercury successfully recovered.

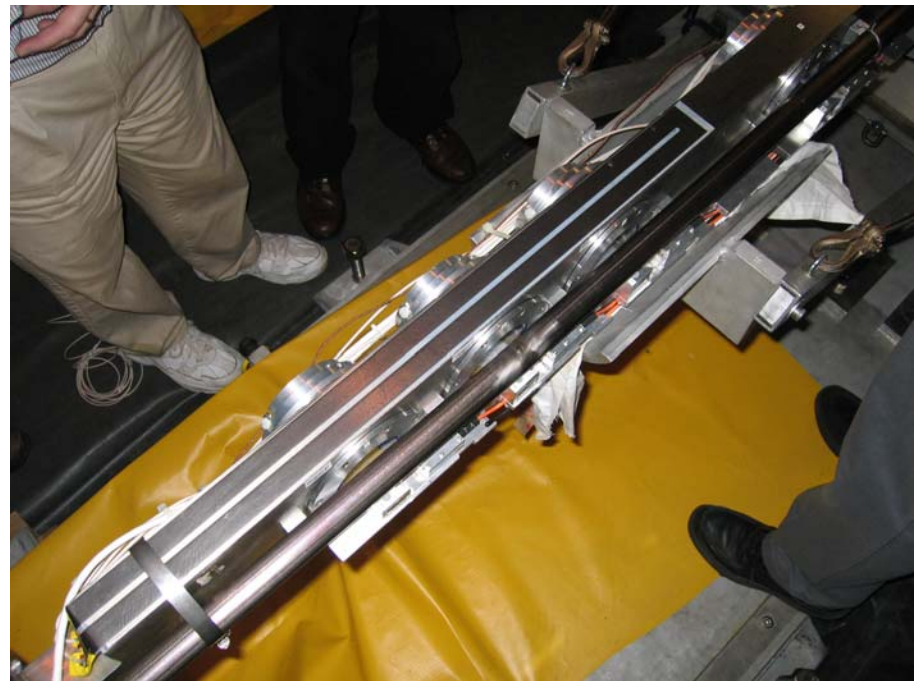
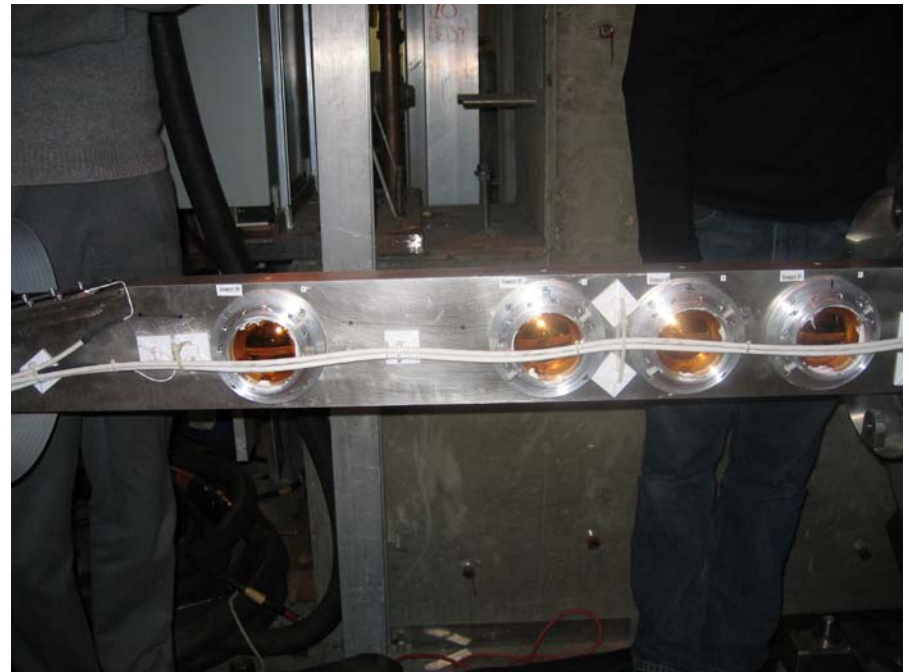
First mercury jets inside cold magnet reveal fogging of windows.



Fri Mar 2

Heaters installed on
secondary snout and
on primary vessel

Mercury images now OK



Sat, Mar 2

14 magnet shots from 5-15 T

Mercury jets from 10-20 m/s

Images collected at 4 viewports.

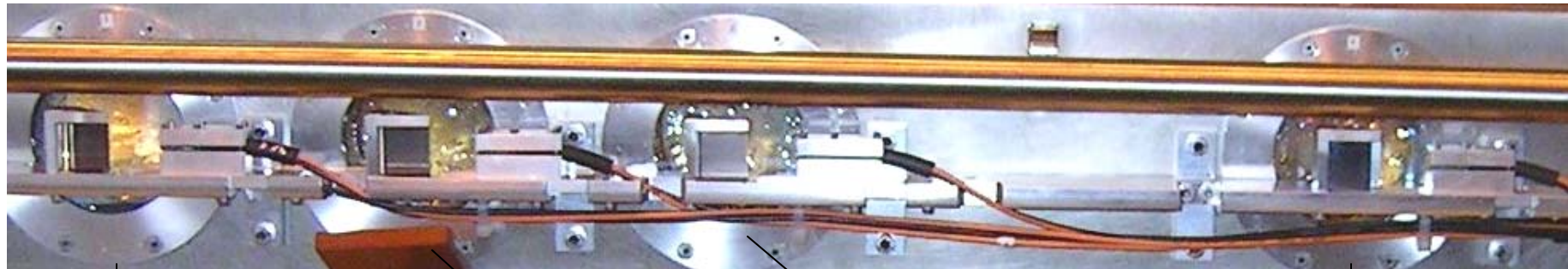
Jet is stabilized by high magnetic field.

Jet height appears large at high field.

MIT Integrations tests very successful.

Congratulations to the many participants.

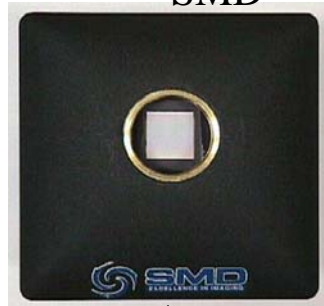
1st Hg jet runs with 15T magnet on March 3, 2007 @ MIT



FastVision 1



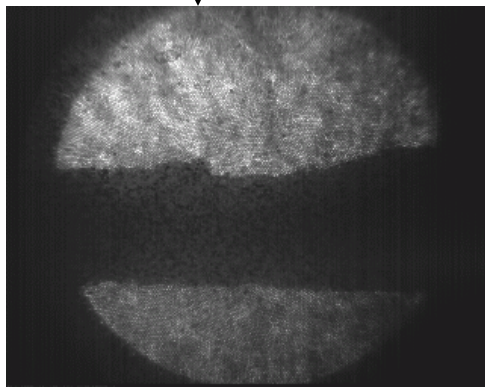
SMD



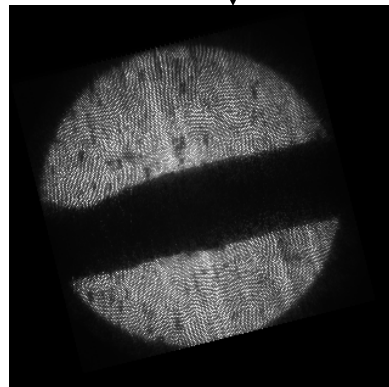
FastVision 2



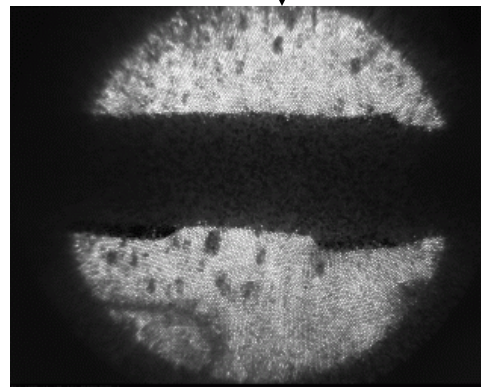
video camera



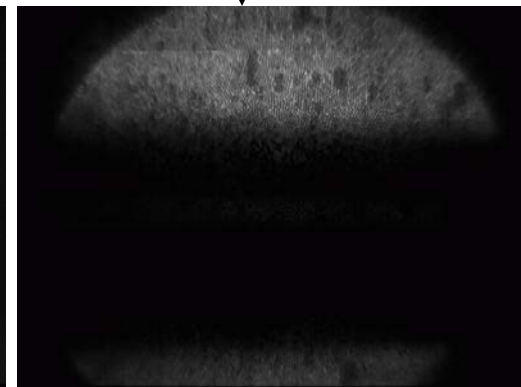
2 ms/frame



0.1 ms/frame



2 ms/frame



30 frames/s

20 m/s Hg jet, 7 Tesla magnetic field

all images have a horizontal flip