# Target and ISIS Monitoring with EPICS

Pierrick Hanlet
Illinois Institute of Technology

# Outline

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- Description
  - The Variables
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- What's Next
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# The Need

## Establishing Beam to the MICE Spectrometer

- One wants to adjust beamline parameters and observe the affects on ISIS and simultaneously on MICE beamline devices and MICE detectors
- Much simpler if a numerous parameters are plotted together
- Desire alarms to warn shifters

## Normal Data Taking

- Graphical view for shifters to monitor ISIS and MICE beam parameters
- Documents changes which may affect ISIS (self protection)
- Desire alarms to warn shifters

# The Need

## Why EPICS? (not all exclusive to EPICS)

- already in use for MICE
- mature package (i.e. well debugged)
- large, international community, with lots of support and expertise
- easy to use
- factorable tasks

## What is Desired?

- waveforms of ISIS and MICE beamline parameters during a target activation
- long-term monitoring to follow trends

# The Variables

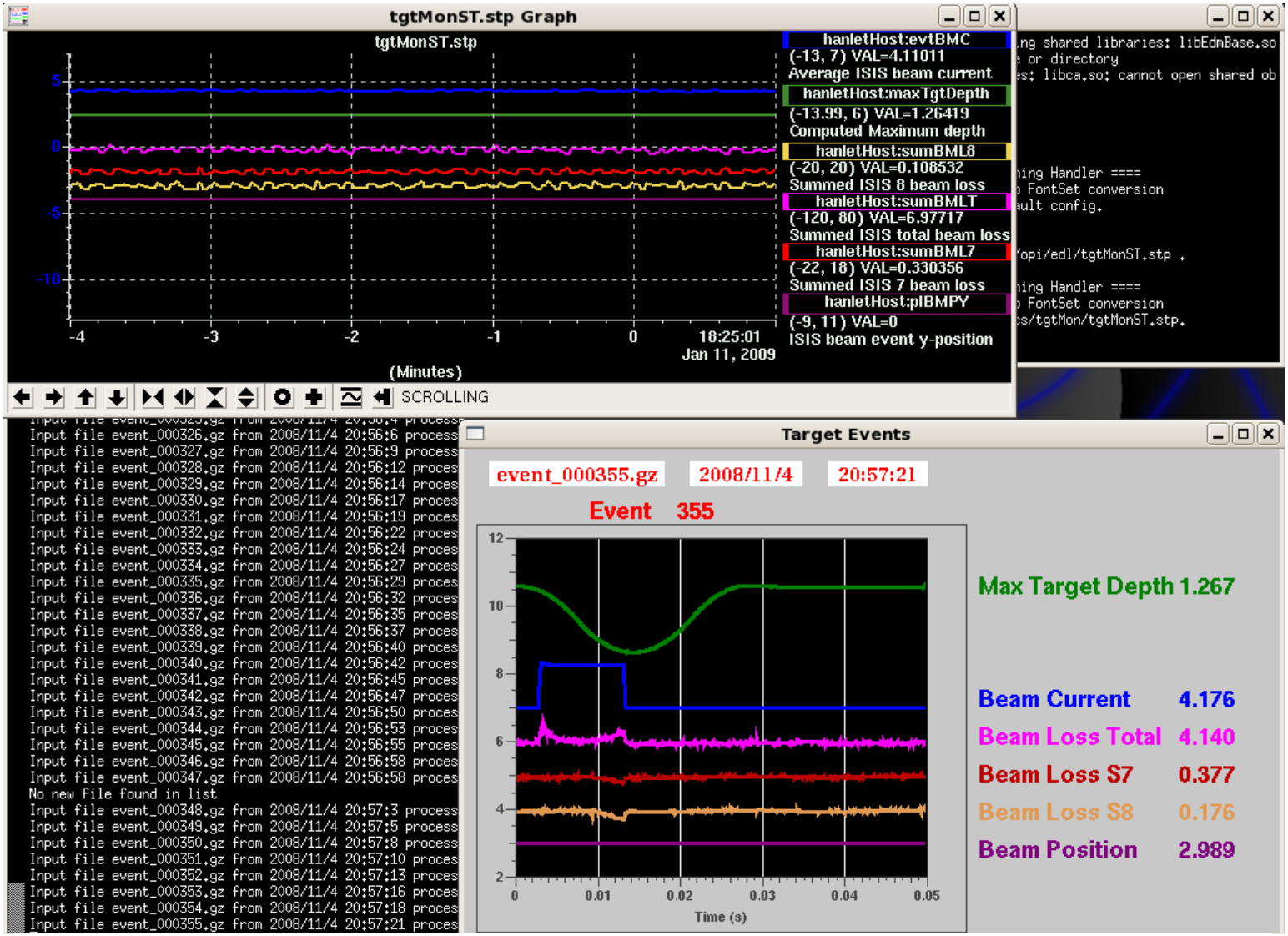
## What Are We Monitoring vs Time?

- MICE Target Position
- ISIS Beam Current
- ISIS Beam Position (both X and Y)
- ISIS Beam Loss (several signals)
- MICE Luminoscity?
- Discriminator Variable? (to be determined)
- ISIS Beam RMS?

# How It Works

- ISIS and Target(MICE) signals input to Target PC
- Standalone Target DAQ or DATE-DAQ read card in Target PC
- Both DAQ versions print out zipped flat files
- EPICS IOC (Input/Output Controller) is run on Target PC (from script which defaults to latest file)
- IOC reads and processes files (directory is set by softlink)
- Monitoring program run from any computer on subnet (from script)

# What It Looks Like



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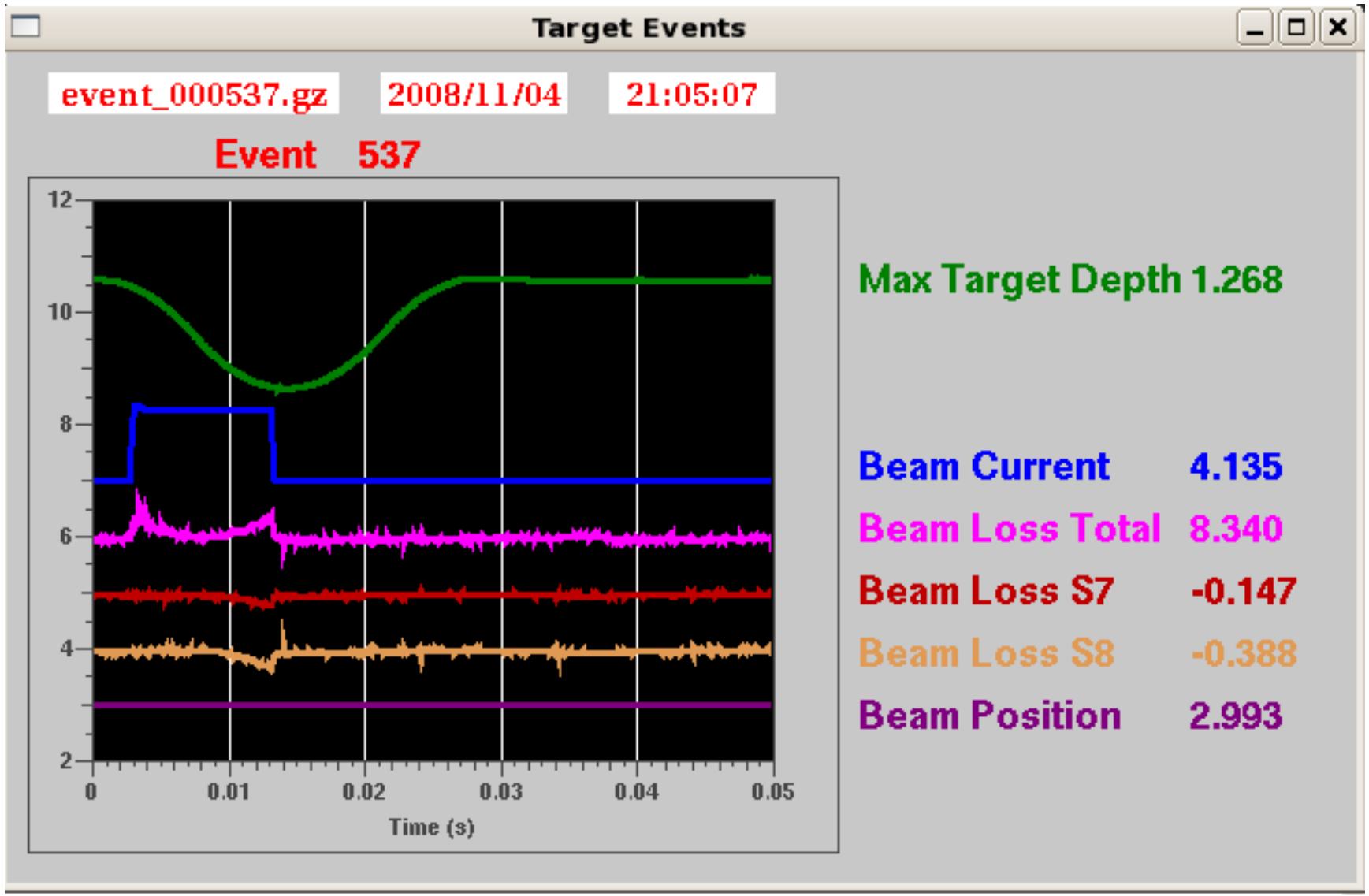

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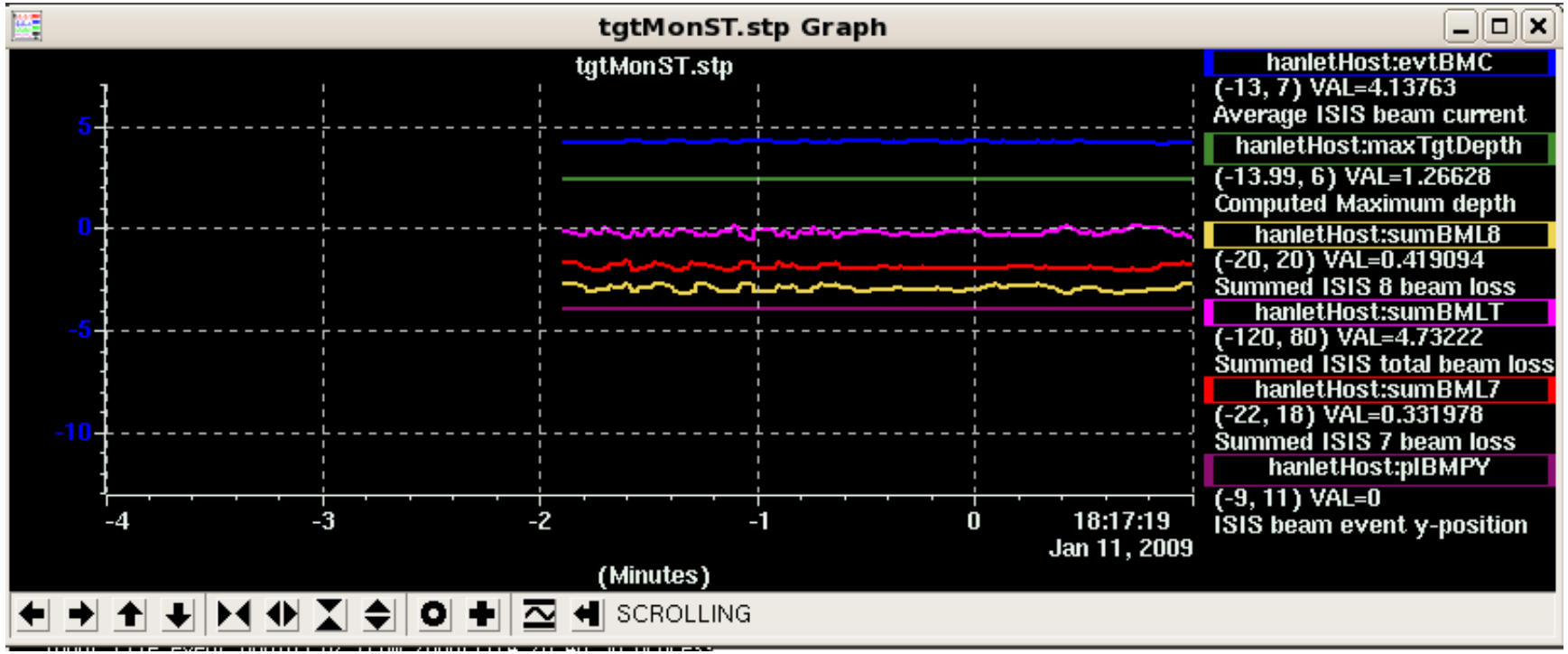

# Demonstration

# What's Next?

- Finalize signals to be displayed
  - X *AND* Y
  - luminoscity
  - discriminator
- Normalize displayed signals
- Correlation of target data file and actuation number
- Implement non-default mode of operation
- Suggestions???

# Summary

- Target Monitoring in EPICS is working and tested at RAL with "old" data
- Request additional signals
- Minor modifications in progress
- Needs testing under operating conditions
- Open to suggestions