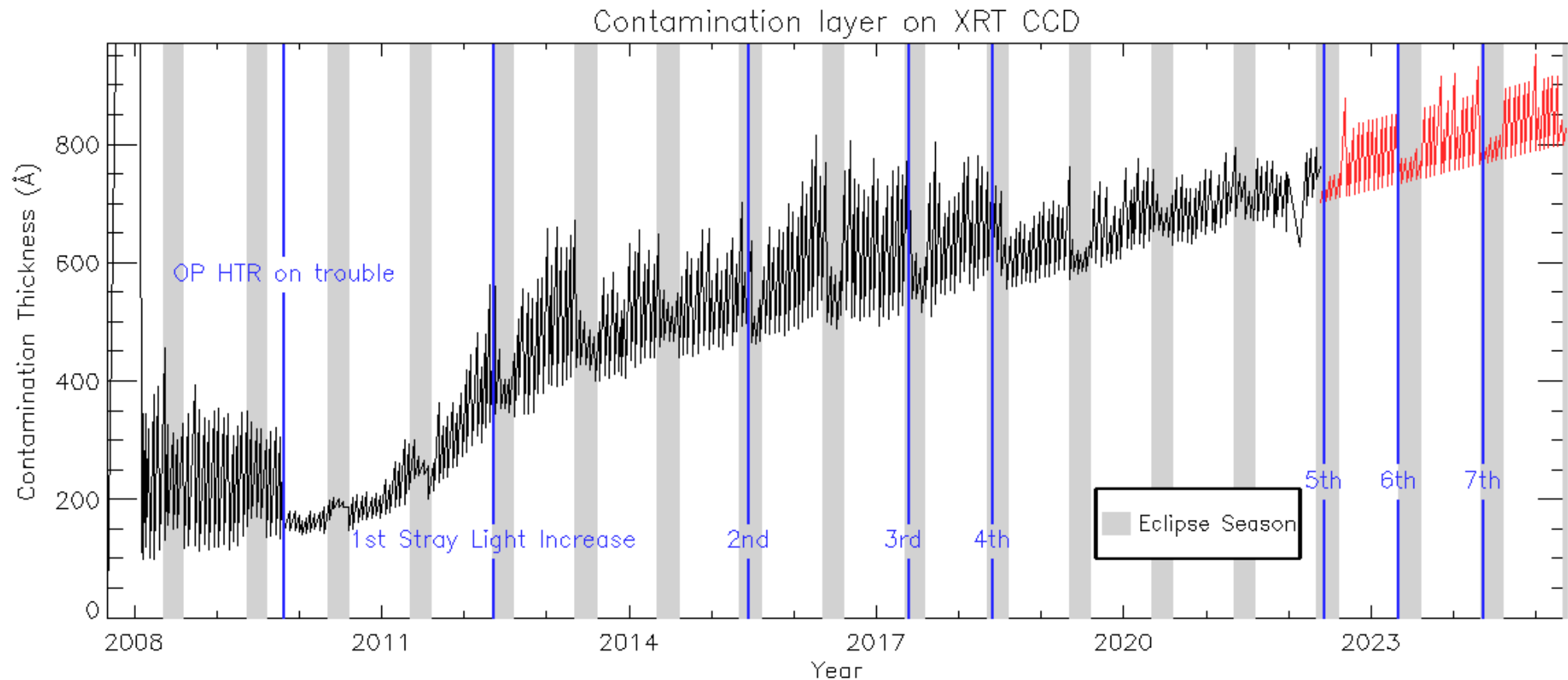


**Long term plots of
contamination thickness on CCD
and
roll angle
+
roll angle measurement using SUVI**

K. Yoshimura (MSU)

2025/05/23 XRT Calibration Meeting

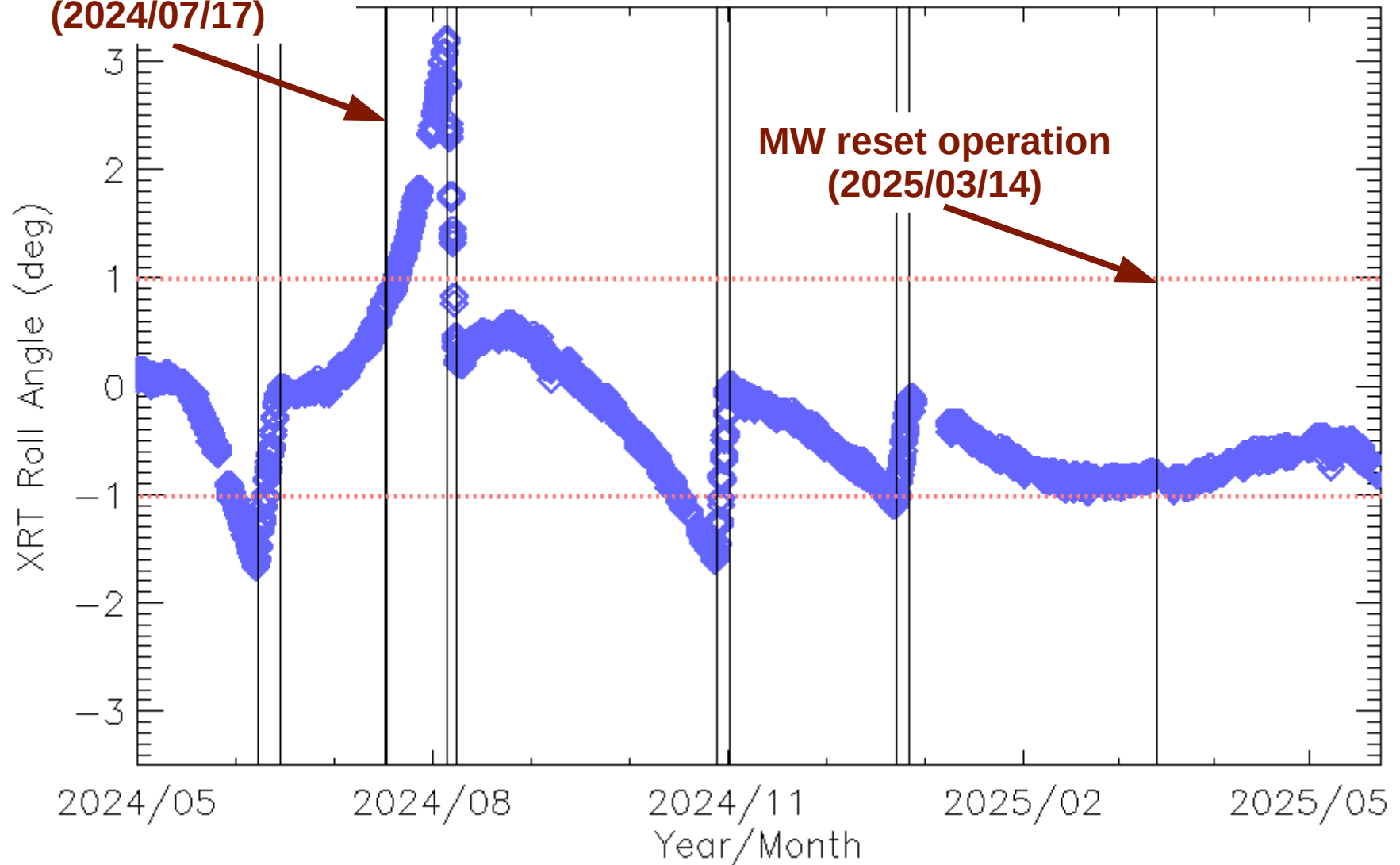
Long term plot of contamination thickness (2007/09 – 2025/04/27)



Black line: measured values
Red line: extrapolated values

Long term plot of roll angle of XRT (2024/05 – 2025/05)

MW reset operation
(2024/07/17)



MW reset operation
(2025/03/14)

Vertical black lines show time of drift rate change operation

No anomaly

JSOC Down (No AIA data available)

(2024/11/26 – 2025/01/26)

Impacts:

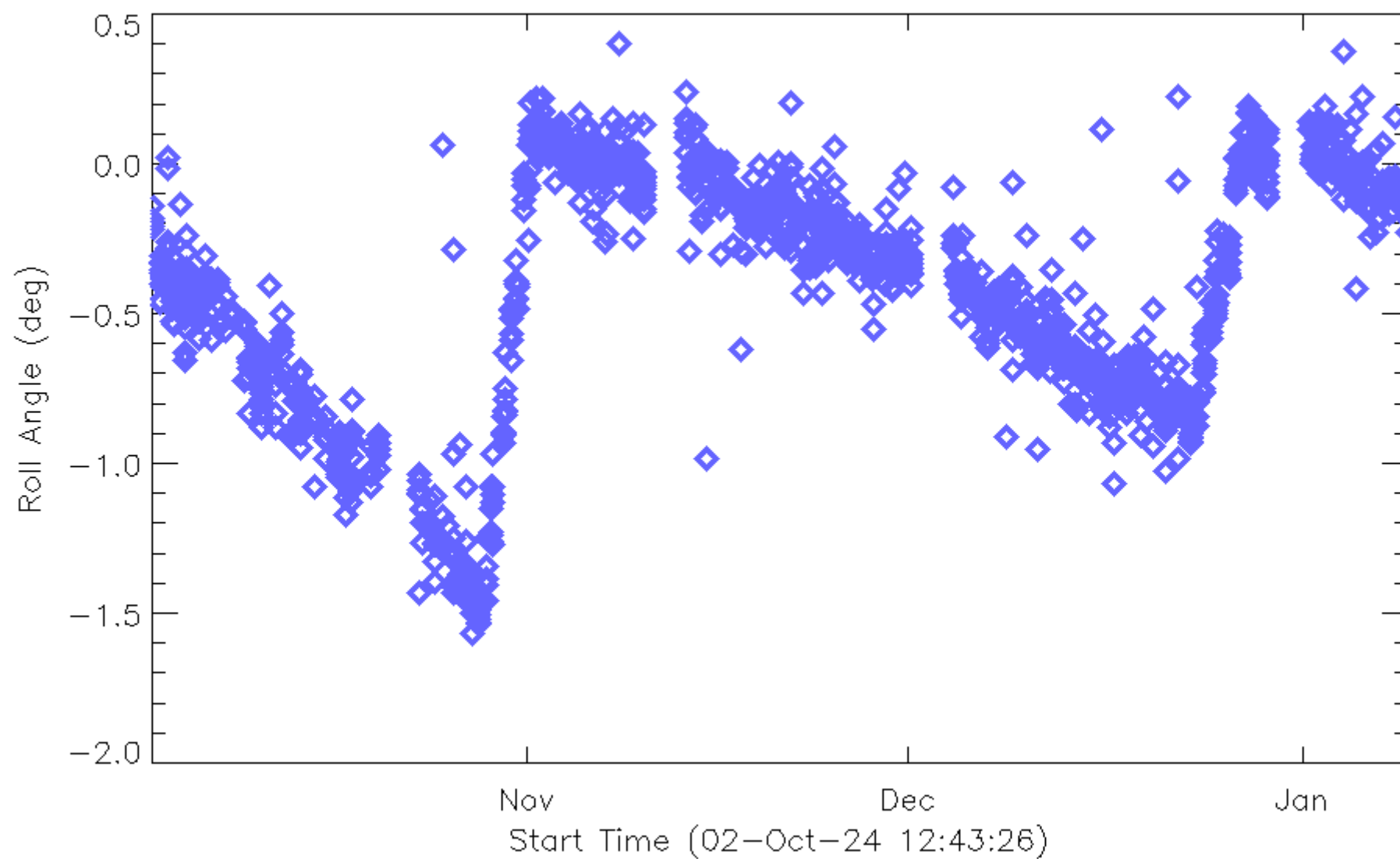
- Roll Angle monitor
 - Use SUVI data
- Roll Angle DB / Coalignment DB
 - Stopped processing until the JSOC recovery

Roll angle measurement using SUVI data

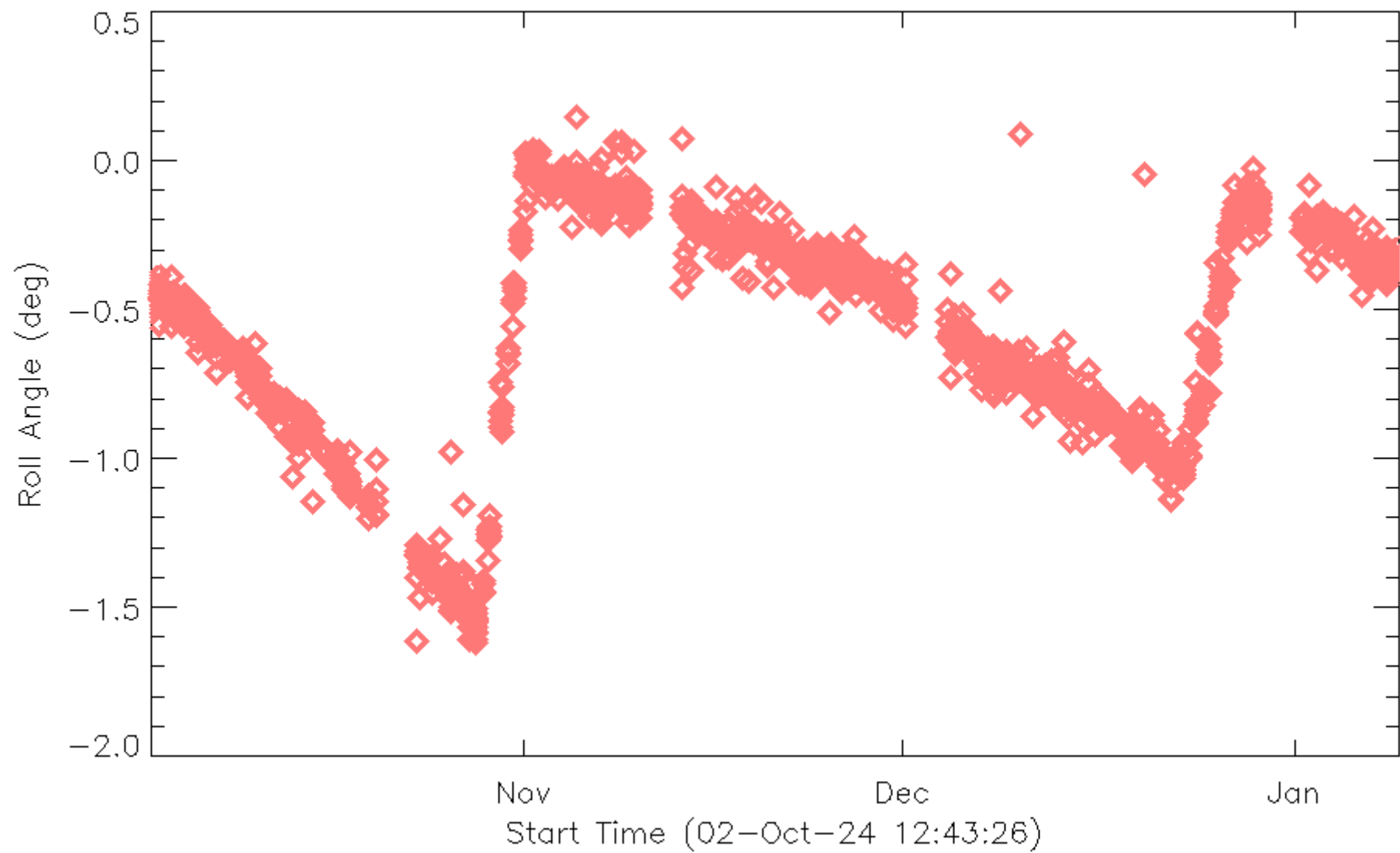
Concerns:

- No 335A image
 - using AIA 335A for the measurement when AIA data is available
 - comparing 284A image of SUVI with XRT's thin filter image is best
- No detail knowledge about the roll angle of SUVI

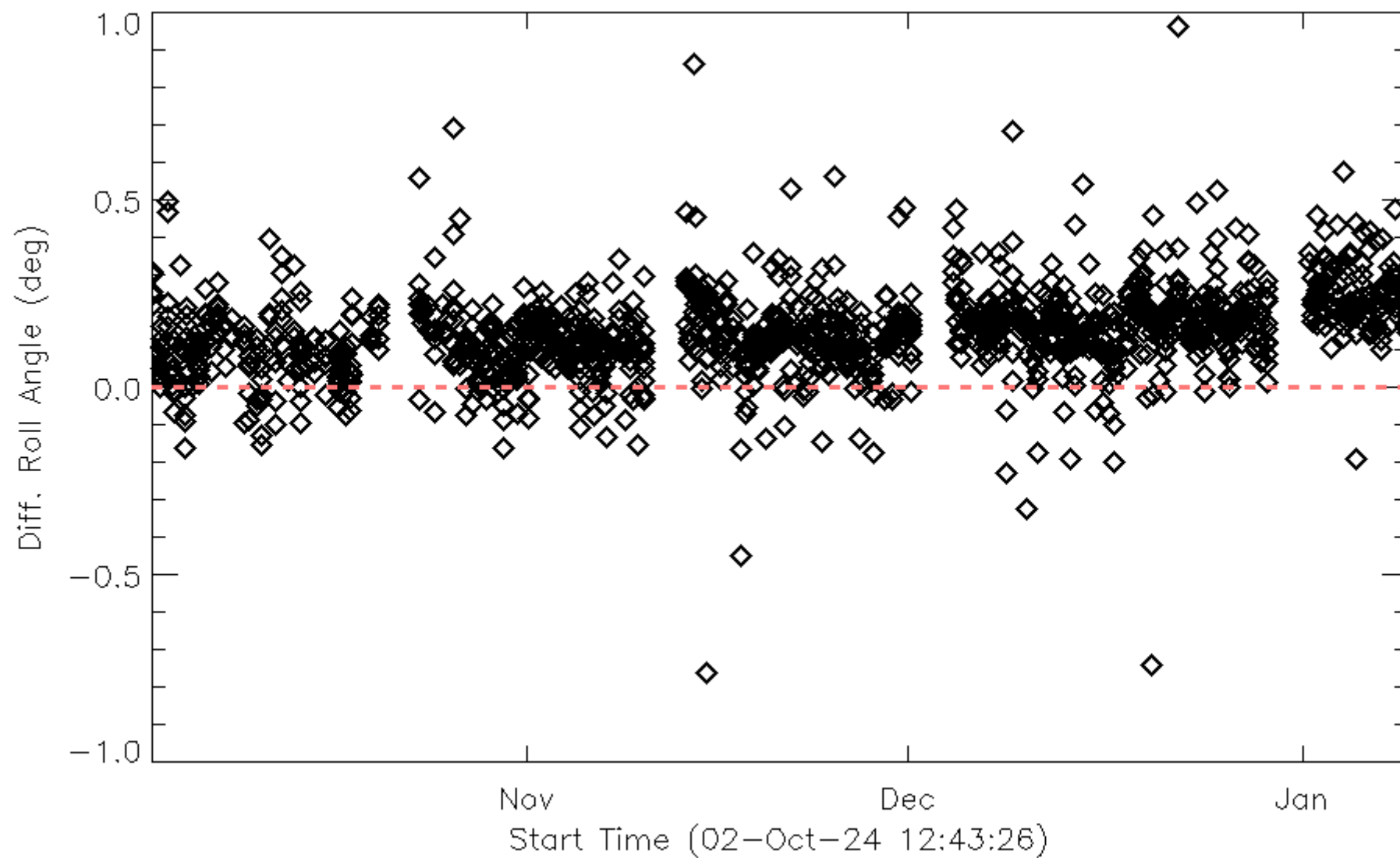
Using SUVI 284A data (θ_{SUVI})



Using AIA 335A data (θ_{AIA})



Difference b/w the roll angles ($\theta_{\text{SUVI}} - \theta_{\text{AIA}}$)



Roll angle measurement using SUVI data

Results:

- θ_{SUVI} shows slightly larger scatter
- offset between θ_{SUVI} and θ_{AIA} exists
 - may be able to calibrate
 - may change in time

0.1 degree, for example, is not a trivial in some cases

→ useful enough for monitoring purpose, but AIA is better choice