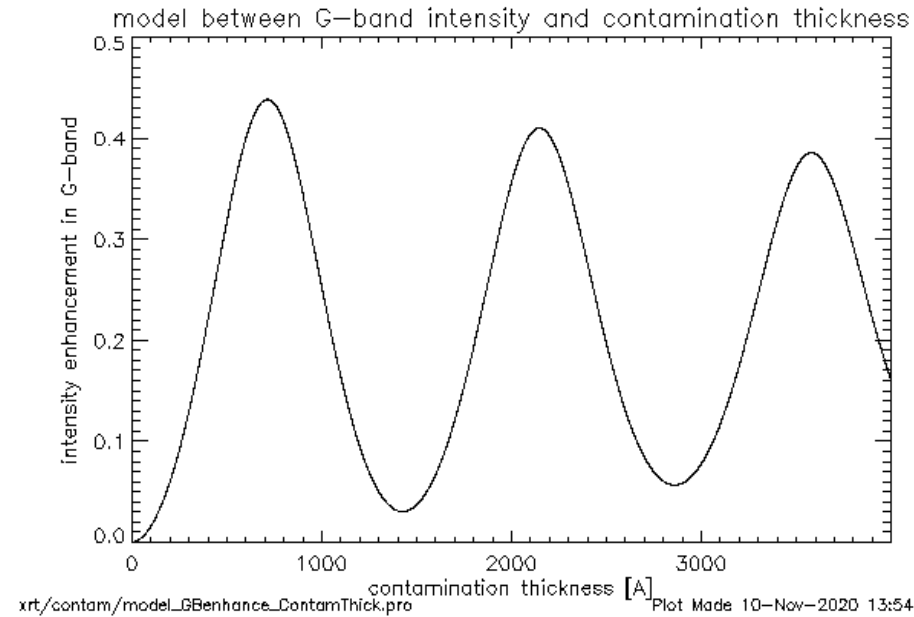


# XRT Contamination Thickness Database

Keiji Yoshimura

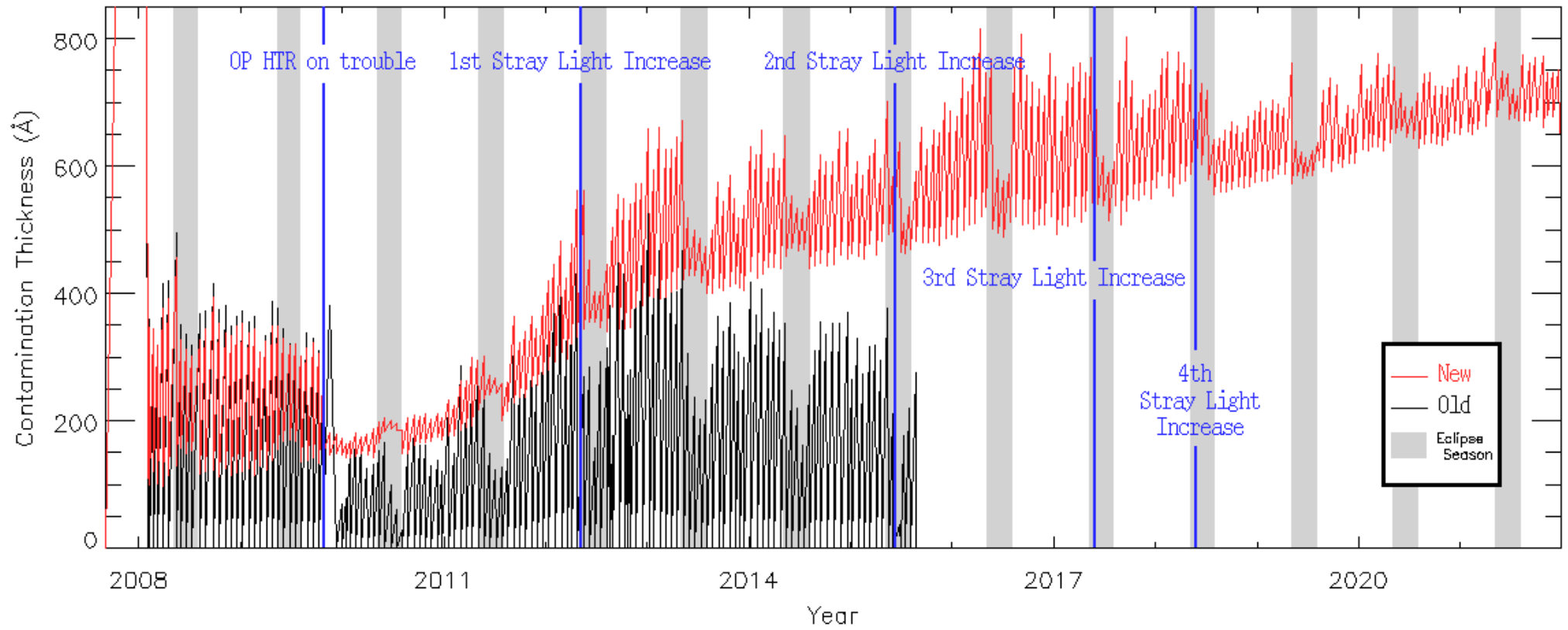
# Database of Contaminant Layer Thickness on XRT CCD

We can derive the thickness of the contaminant layer from the enhancement of the G-band intensity. We update the database of the thickness regularly (once per a few weeks), and distribute it through the SSWDB.



- Currently the DB covers through 2021/12/27.
- No method/program changes since the last calibration meeting in 2021.
- I quickly checked some of the G-band images taken after the long safe-hold mode, and found no sign of big increase of the thickness.

Comparison of New and Old contamination thickness database



# XRT Coalignment Correction

Keiji Yoshimura

- Coalignment database
- Roll angle monitoring/correction

# Database for Coalignment of XRT data

The coalignment database (pointing information) is created from the information of:

- Hinode's sun-censor (UFSS) output
- Offset between Hinode's pointing and XRT's (orbital change + long term change)

The DB is updated once per week, and distributed through the SSWDB.

- Currently the DB covers through 2022/03/14.
- I manually modified the entries for the data during the big roll angle.
- No other problems in the DB, as far as I checked.

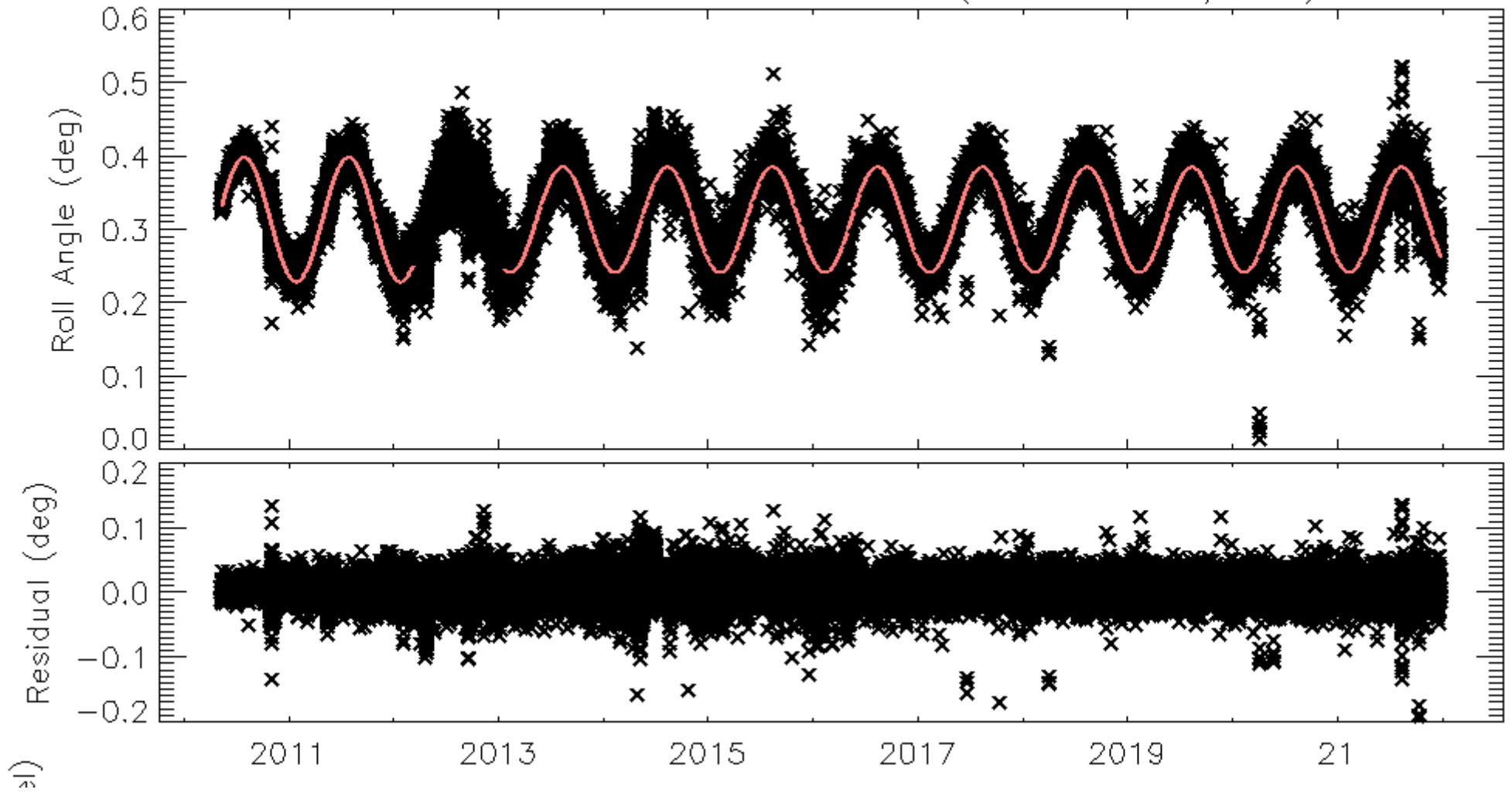
# Roll angle of XRT

The roll angle of the XRT can be determined through the comparison between the XRT thin filter images and the AIA 335A ones by using the cross correlation technique.

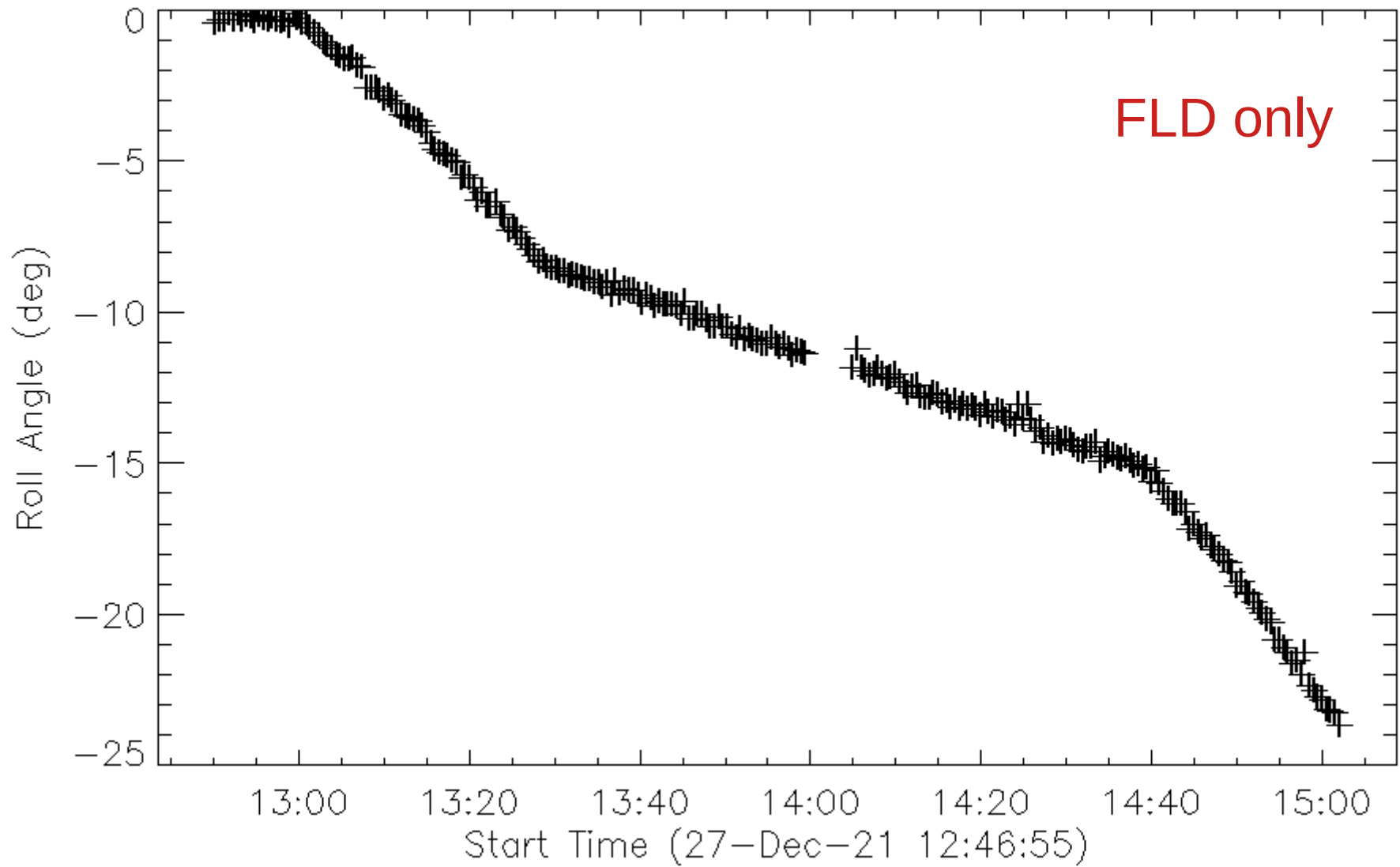
The accuracy depends on:

- **FOV size** (*larger is better*)
- **Binning** (*higher spatial resolution is better*)
- **Pointing** (*disk center pointing is best*)
- **Difference of the features on the Sun between the two images**  
(*cusplike shape of LDE is one of the worst source of error*)

### Results from Cross Calibration (XRT and AIA/335)



2021/12/27

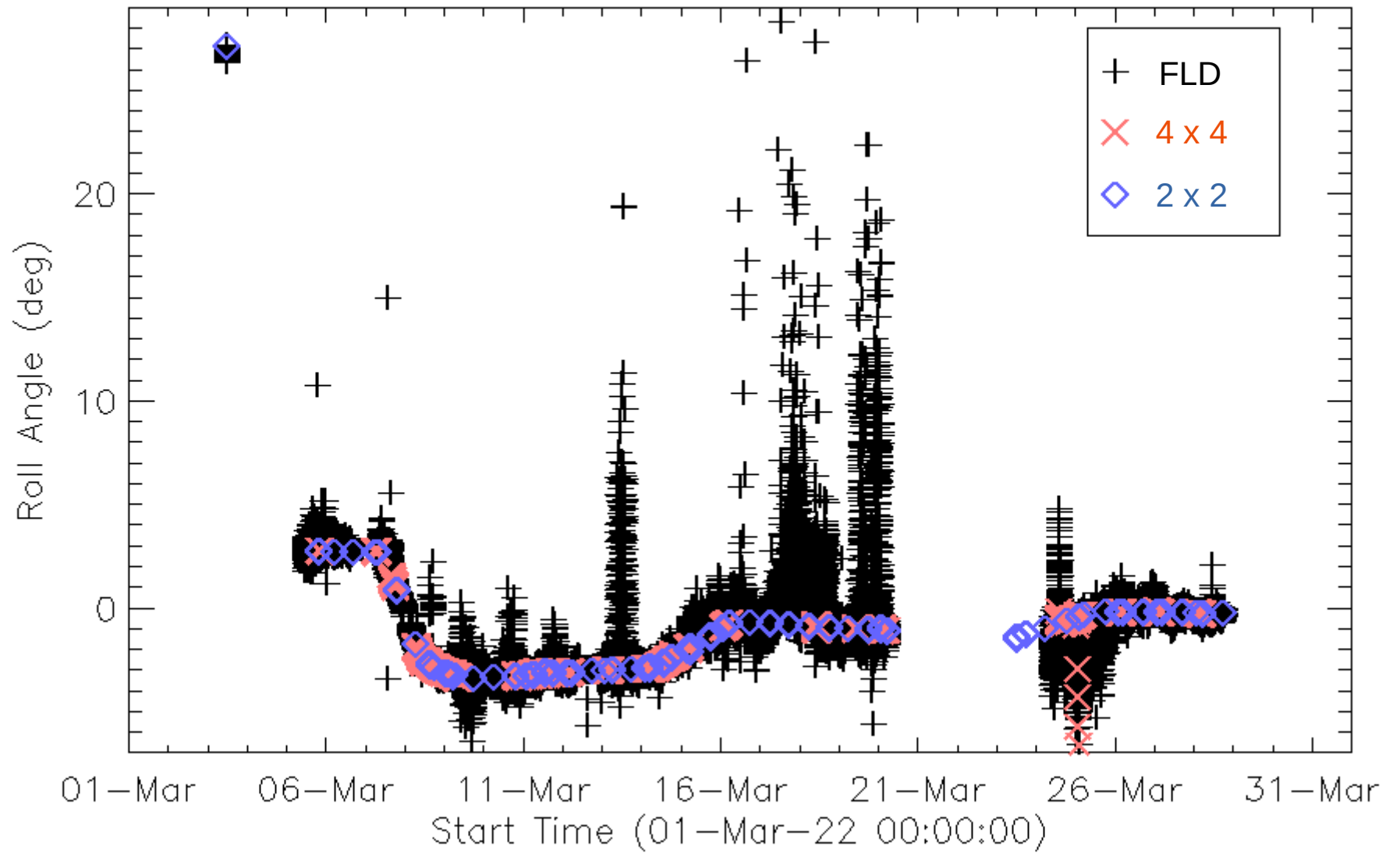




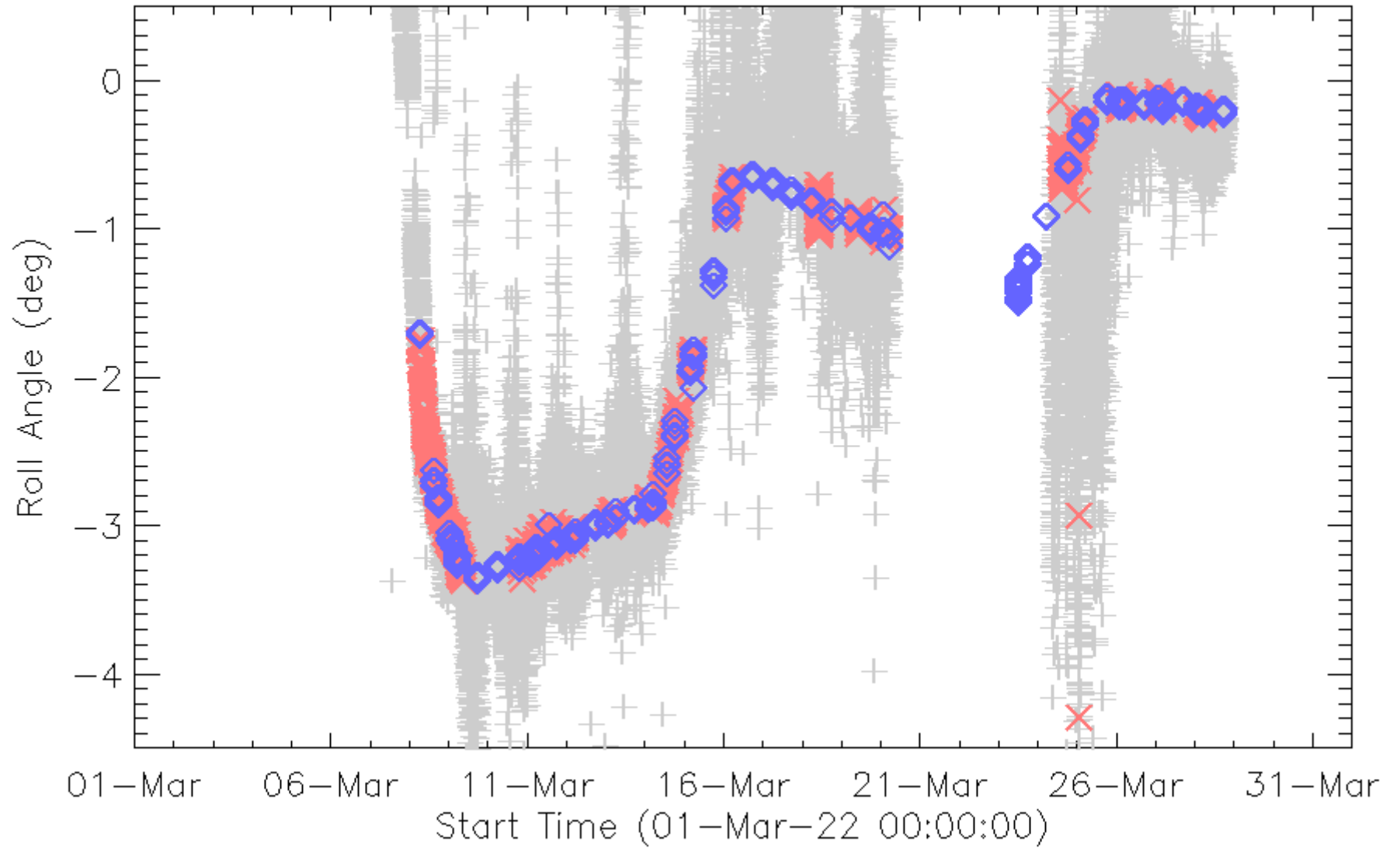
# Roll angle of XRT

- QL data monitoring ( [https://solar.physics.montana.edu/HINODE/XRT/roll\\_angle/](https://solar.physics.montana.edu/HINODE/XRT/roll_angle/) )
  - Updated automatically
  - Provides with plots and CSV files
  - QL AIA images? (1024x1024, no roll angle info) through VSO
  - Close to 0 degree (as of 2022/03/29)
- xrt\_rollangle.pro
  - IDL program to correct the XRT roll angle
  - Called from xrt\_prep.pro
  - Will be updated for the data after 2022/03/03

2022/03/03 -



2022/03/03 -



2022/03/28

