Detecting Satellite Calibration Anomalies Using AI

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Objectives

- Develop a neural network model to reliably forecast GOES-16 advanced baseline imager(ABI) Band 16 spacelook counts
- Utilize the model to detect anomalies in satellite detector values

Results

- A convolutional neural network architecture was developed to forecast ABI near real time spacelook data
- The model is able to characterize within timeline, diurnal and seasonal variations
- The model was able to accurately predict future values and can be used to mark data points as anomalies

Figures

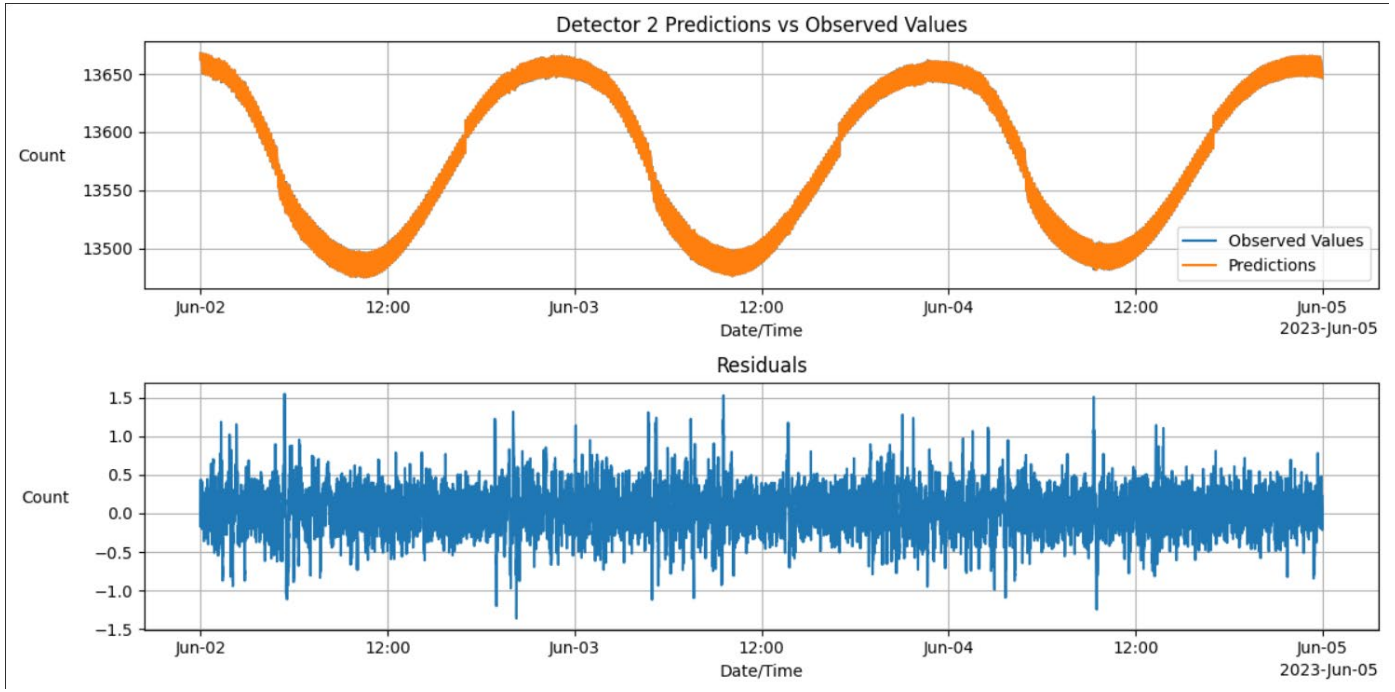

Fig 1. Top shows the time series of B16 Detector 2 spacelook observations from June 2- 4, 2023, with observed values in blue and predicted values in orange.
Bottom shows the residuals(predicted - observed).