

Time-resolved SEDs of the variable blazar PKS 1510-089

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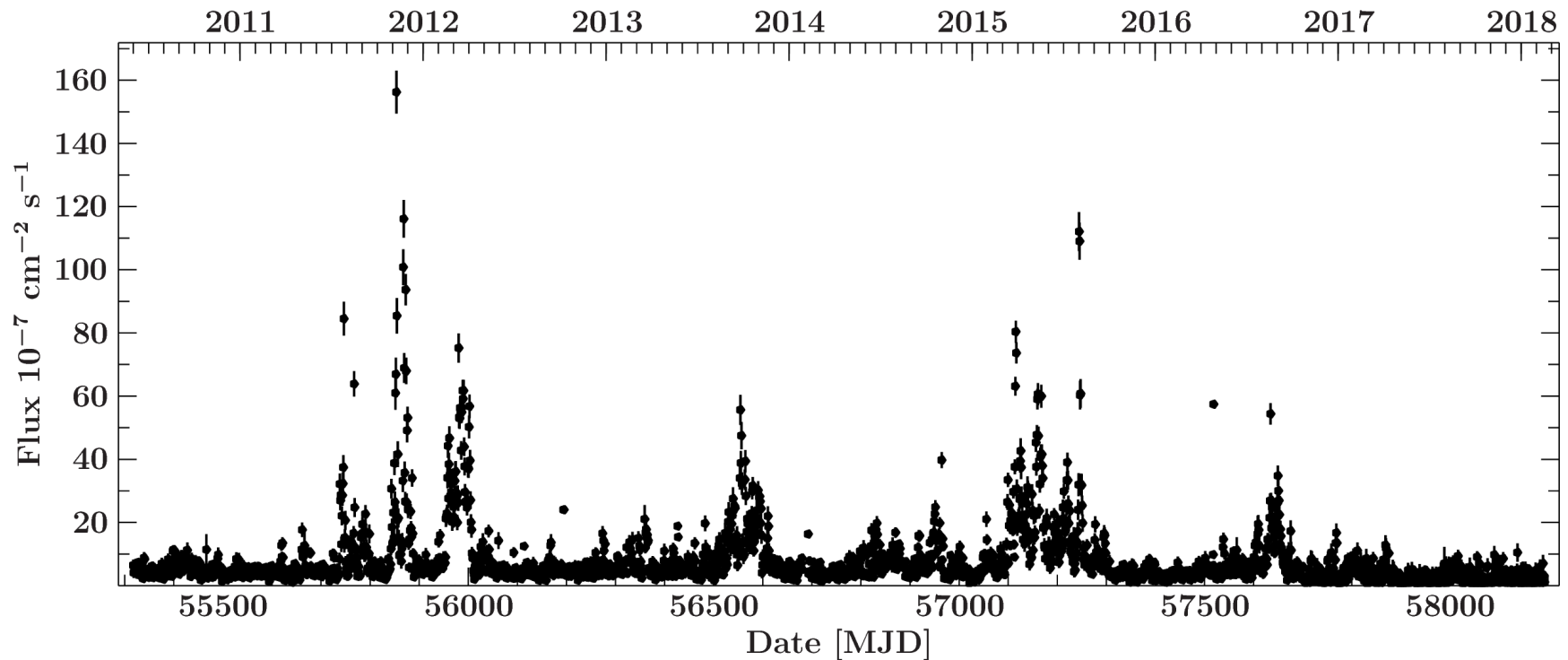
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³Nasa, Goddard Space Flight Center

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The blazar PKS 1510-089

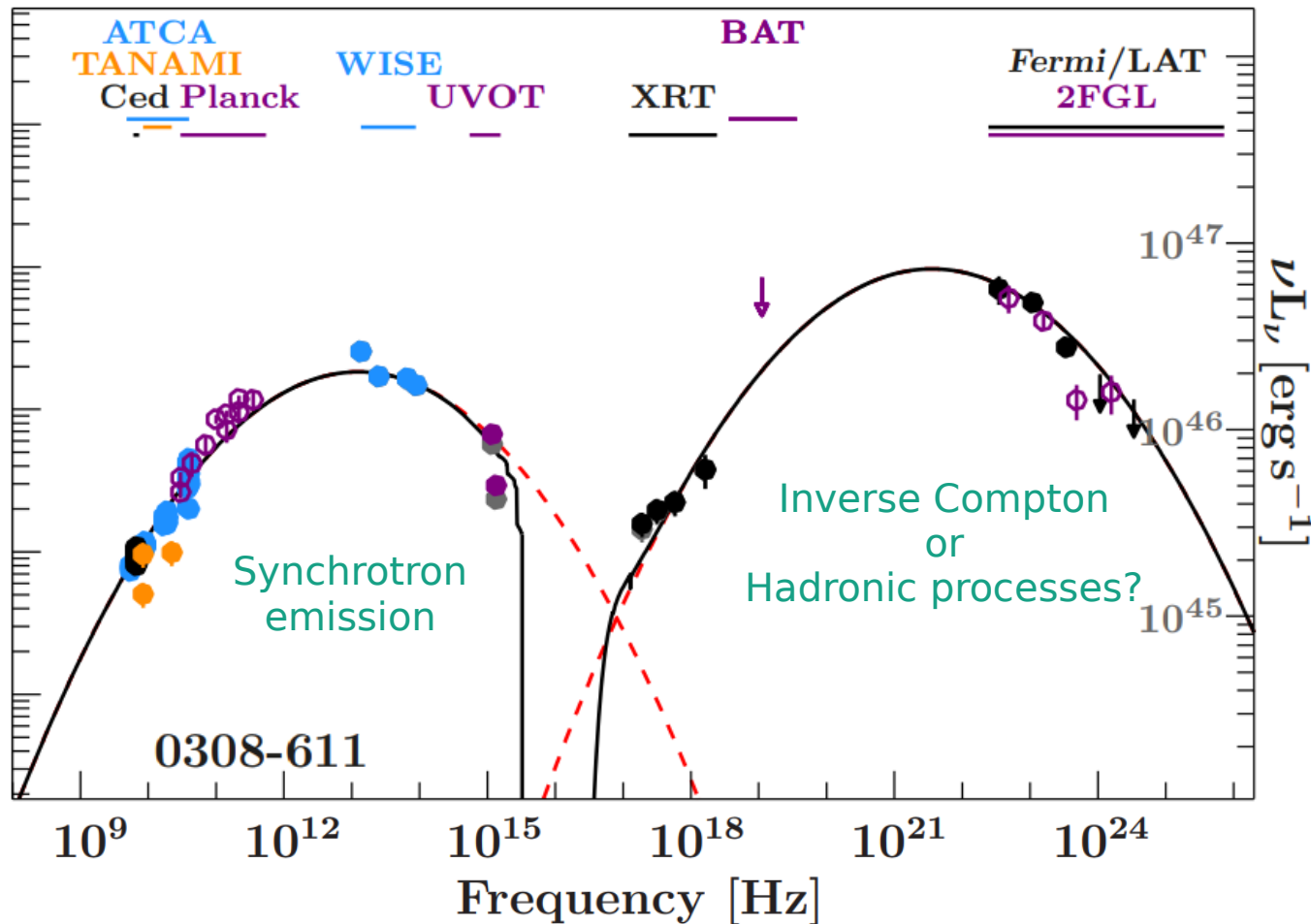


- **FSRQ at $z = 0.36$ (Tanner et al. 1996)**
- **Second FSRQ being detected in VHE regime (Abramowski et al. 2013)**
- **One-zone scenario unlikely (e.g. Nalewajko et al. 2012, Brown 2013)**

Talk by M.
Zacharias
tomorrow

Spectral Energy Distribution (SED)

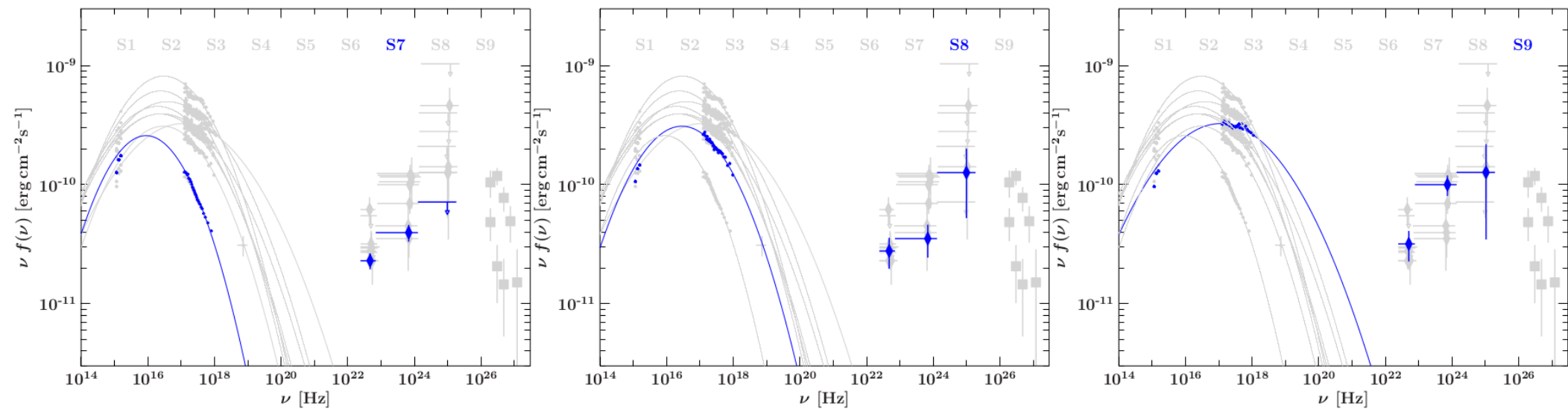
- Broadband emission from Radio to Gamma-rays



Credit: Krauss et al. 2014, A&A, 566, L7

Changes in SEDs

- Retrieving insights in the connection between flares and emission processes
- Example: Outburst of Mrk 421



Credit: Kreikenbohm et al., in prep.

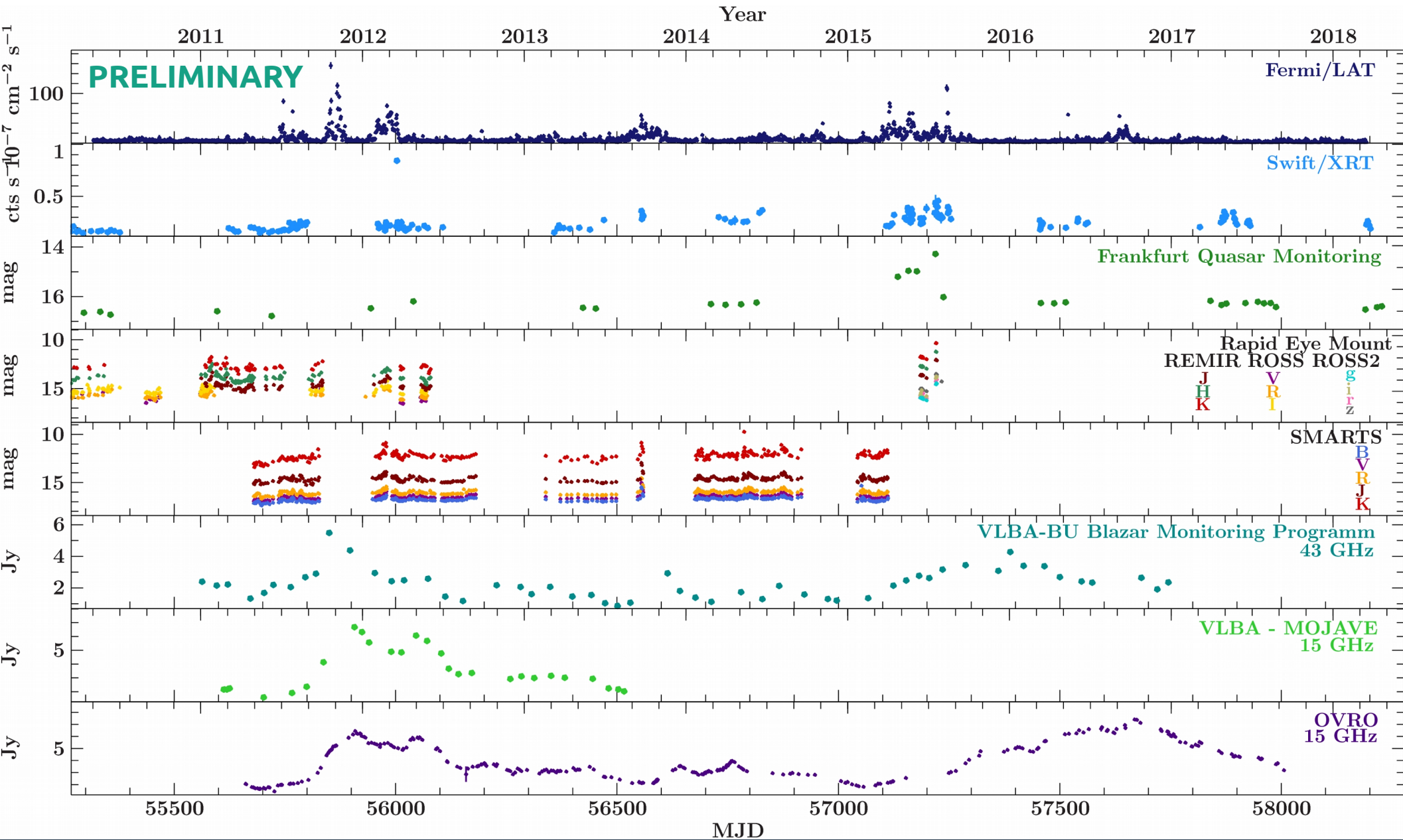
All SED data from PKS 1510-089

PKS1510-089 Ra=228.21033 deg Dec=-9.10008 deg (NH=6.9E20 cm⁻²)

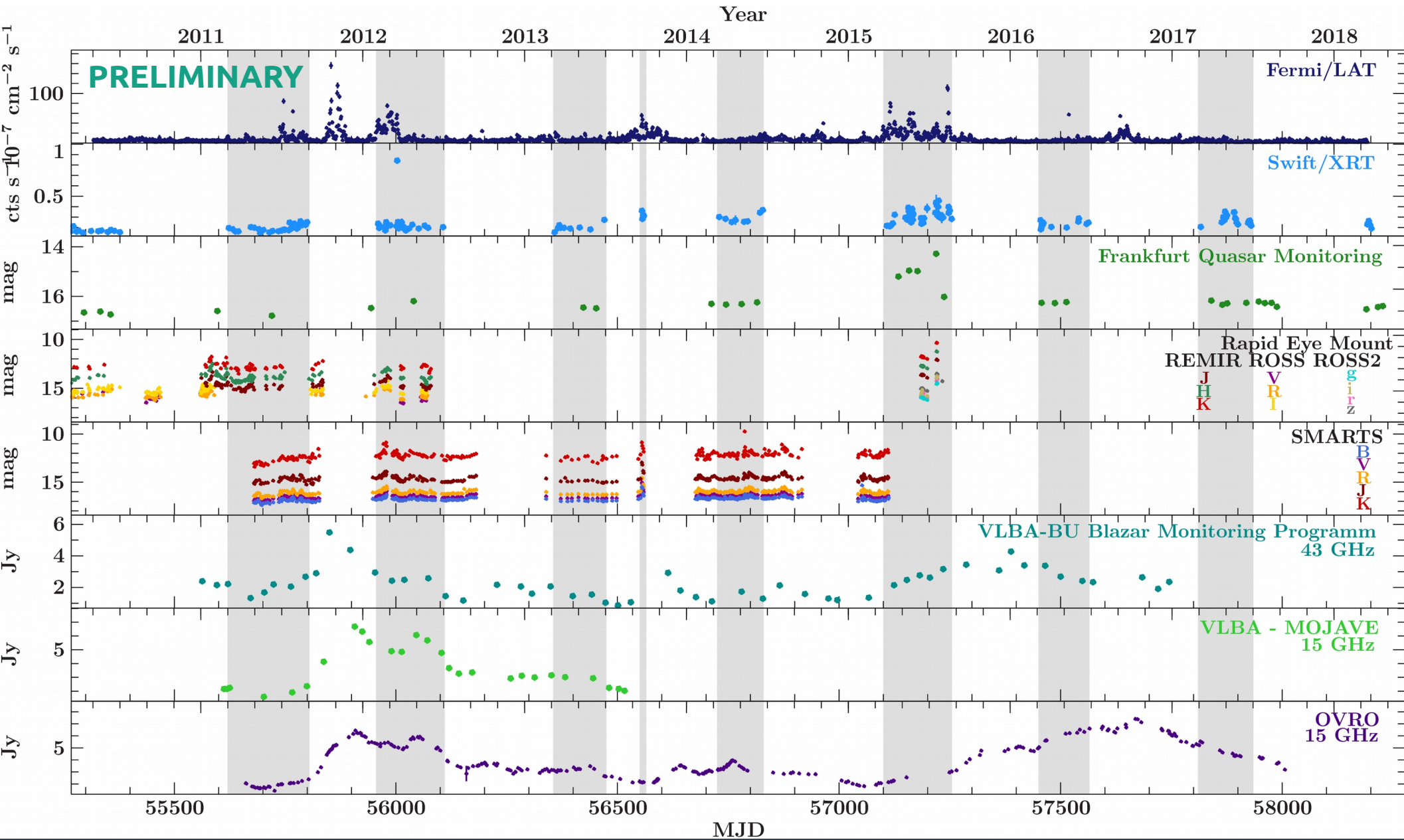


From SSCC: <https://tools.ssdsc.asi.it/>

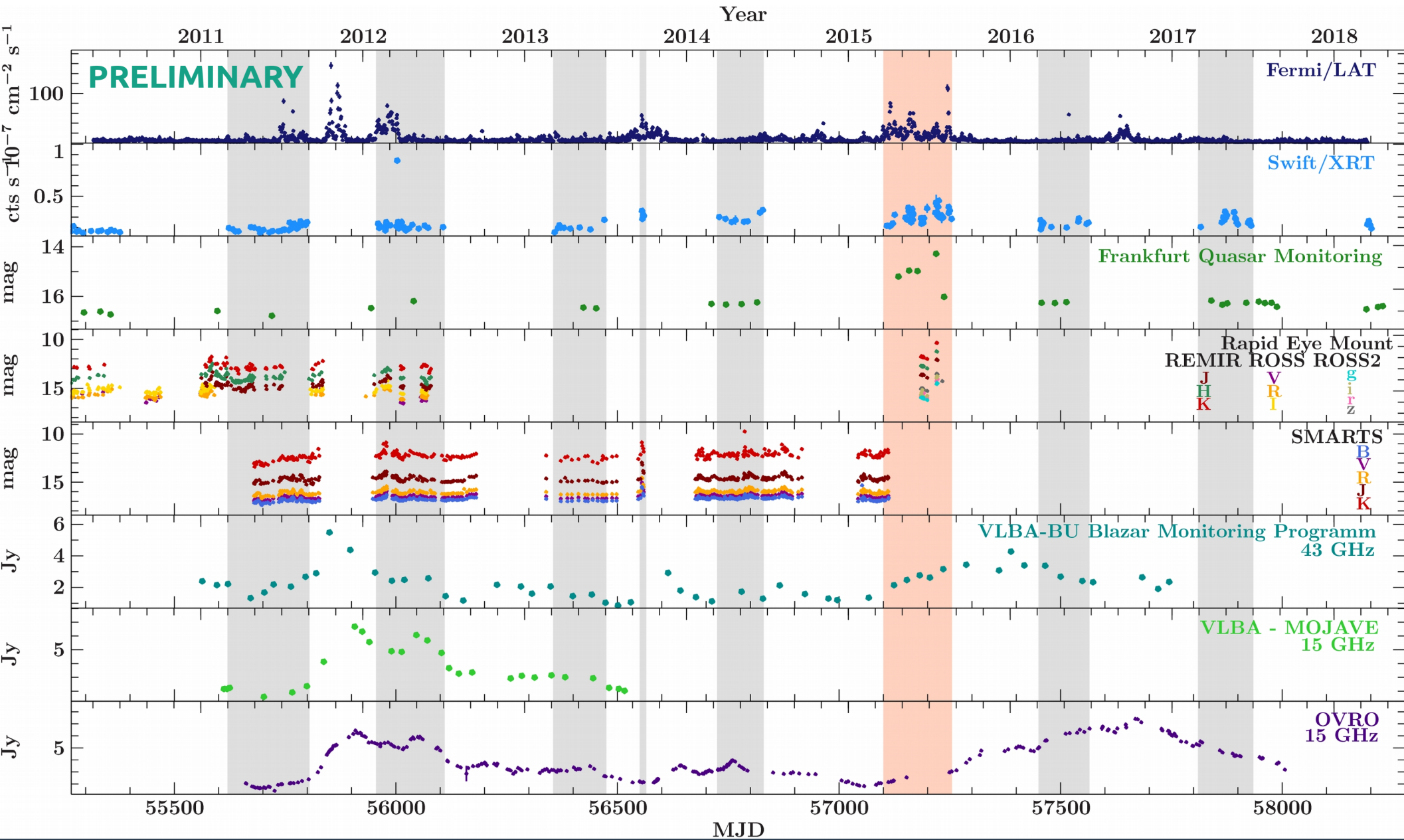
Long-term monitoring of PKS 1510-089



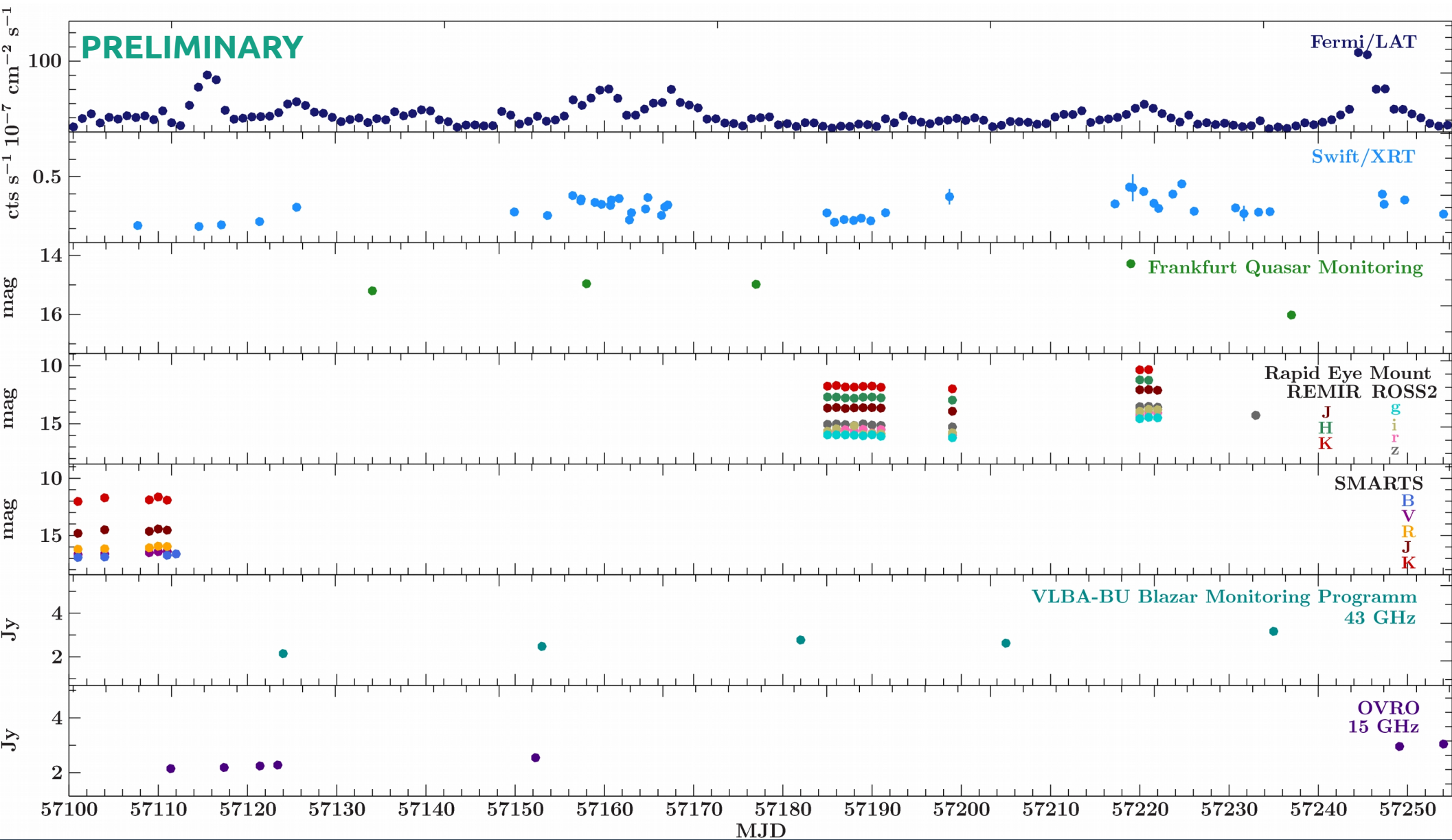
Long-term monitoring of PKS 1510-089



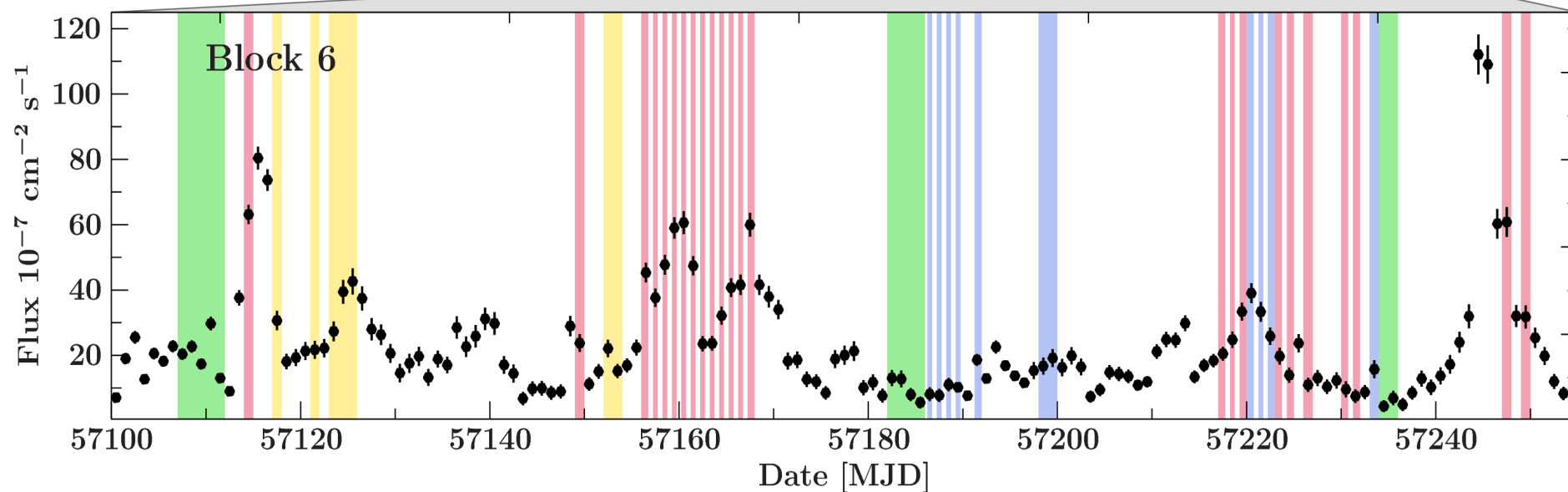
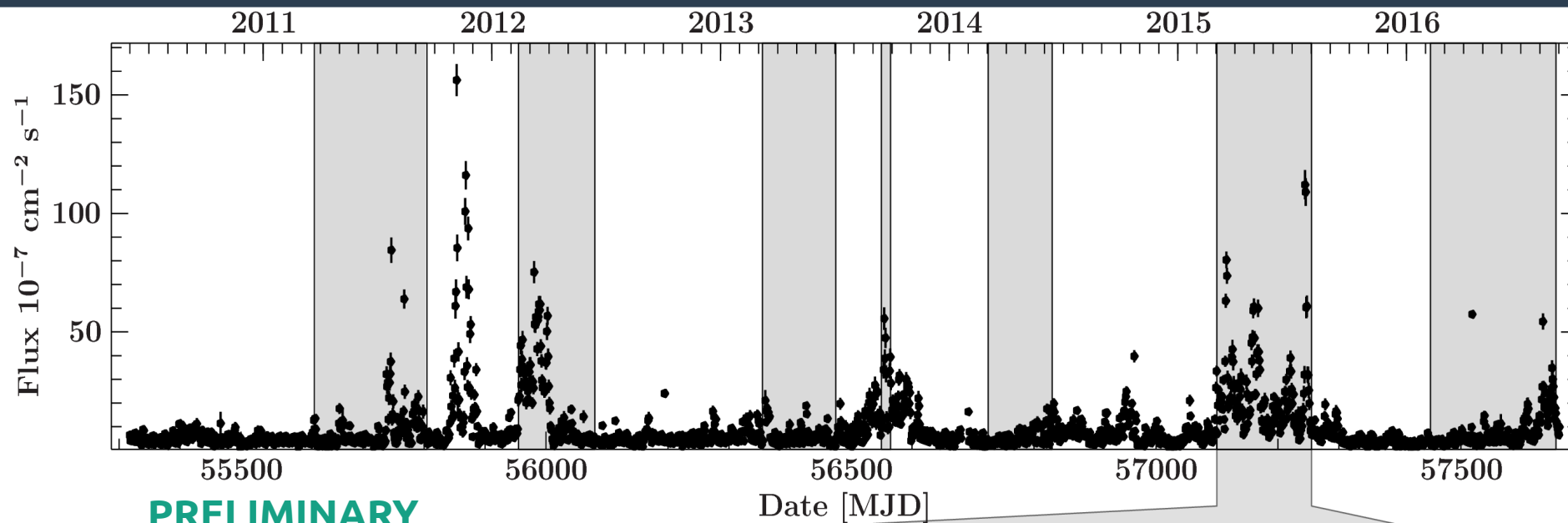
Long-term monitoring of PKS 1510-089



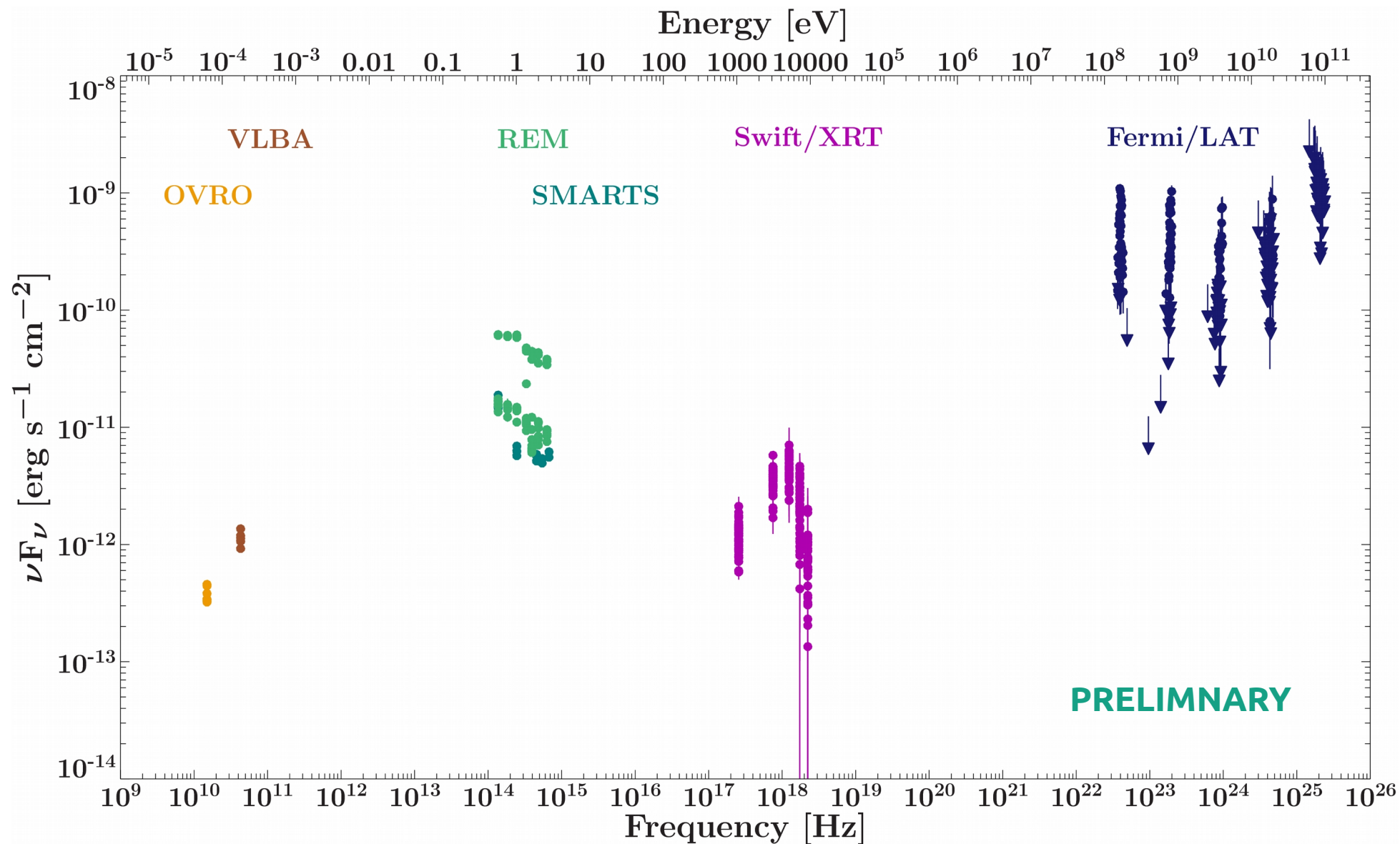
Zoom in on selected time range



Simultaneous observations

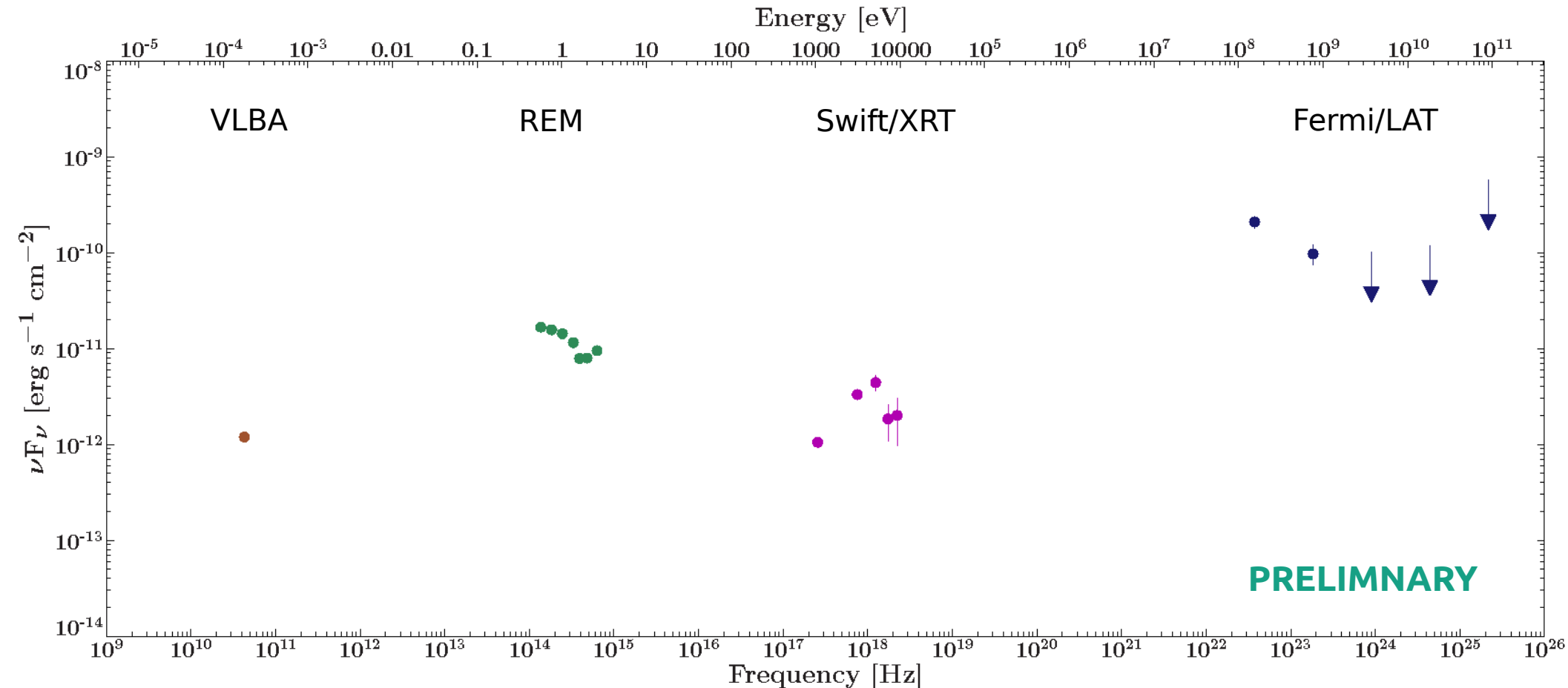


Average SED for selected time range

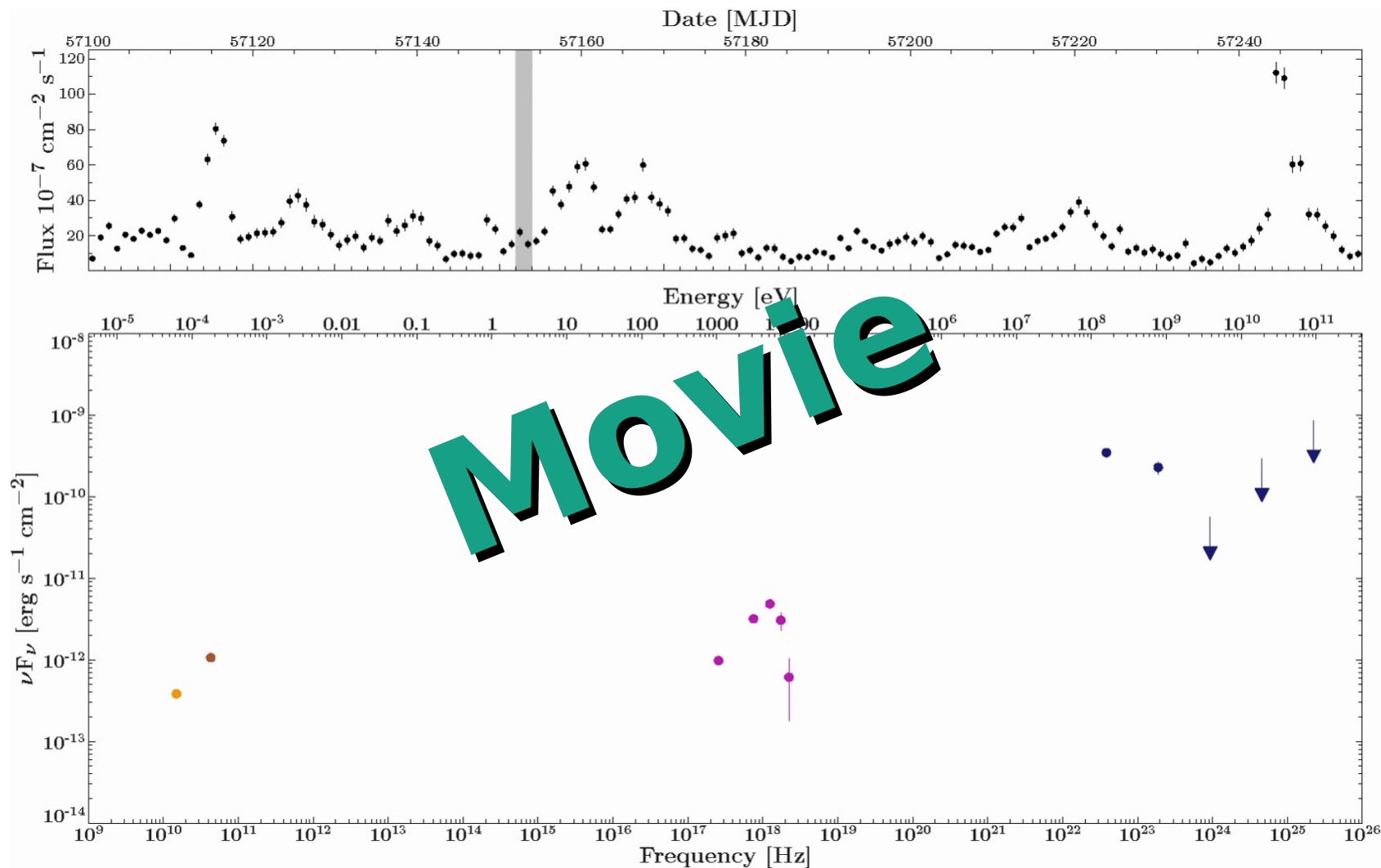


SED of PKS 1510-089

- Example SED from chosen time range



Time-resolved SEDs



Summary

- **Selected time range shows changing behaviour in SED of PKS 1510-089**
- **Outlook:**
 - Include more data (e.g. Swift/UVOT, H.E.S.S.?, MAGIC?)
 - Analysing and modeling the time-resolved SEDs for all selected time ranges
 - Testing for signs of hadronic emission processes
- **Full broad range monitoring essential for understanding variability of blazars**