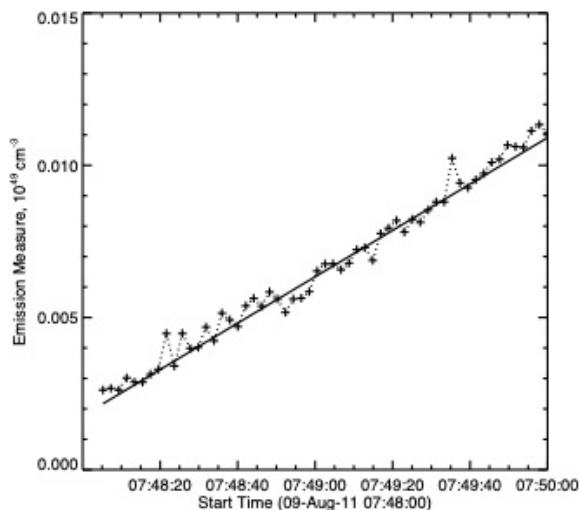
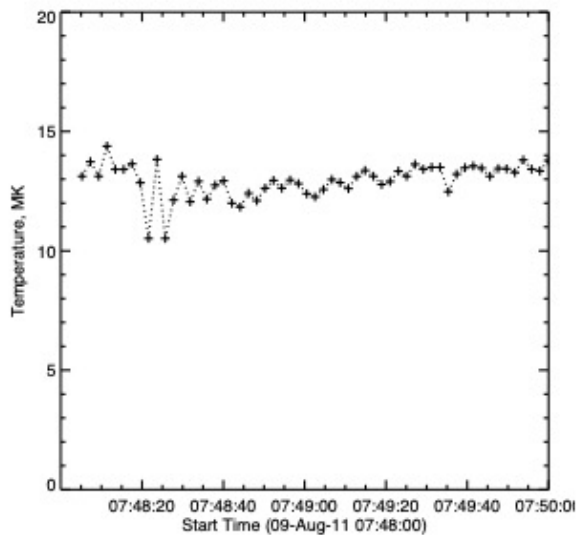
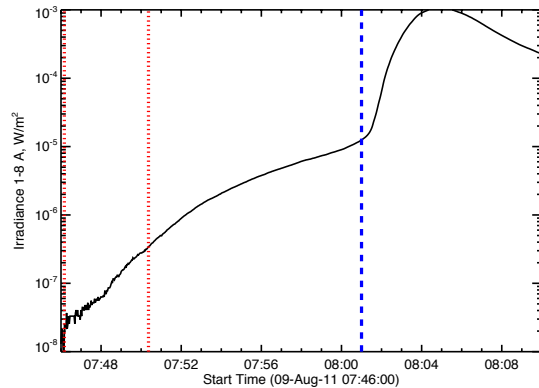


# “Hot Onsets”: New Findings and Interpretation



- The GOES data reveal a previously unrecognized fundamental aspect of solar flares
  - All flares exhibit this precursor property
  - The SXR onset temperature is high, 10-15 MK
  - The emission-measure growth is linear in time
  - This activity precedes the impulsive phase
- The precursor is not “preheating” but rather a direct energization instead
  - The initial high temperature appears on the GOES time scale of 2 s
  - Emission measures are in the range  $10^{46-47} \text{ cm}^{-3}$
  - The hot-onset behavior does not predict the subsequent flare magnitude
- Further development and a theory needed!
  - GOES-R and SXR spectroscopy TBD
  - Image properties (AIA, XRT) TBD