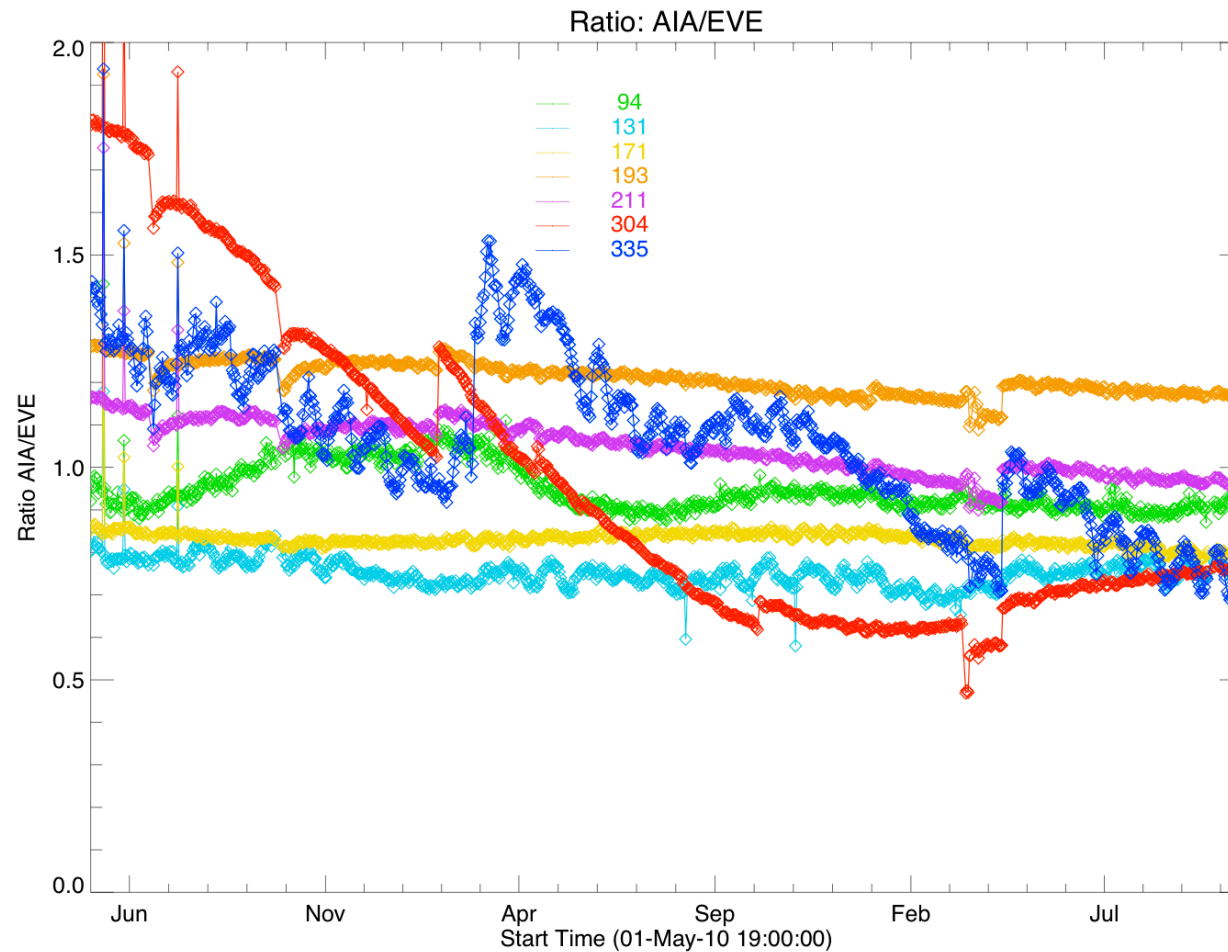




AIA band irradiance



- Plotting the ratio of the observed AIA full-disk irradiance (total of all level 1 pixel values) in the 7 EUV bands to the irradiance predicted based on EVE data and AIA wavelength response function (effective area), as reported in EVL L2 V2





Notable features in AIA/EVE trending plot



- EVE bakeouts result in a jump down, AIA bakeouts cause things to jump up
 - EVE bakeouts result in a transient 1-2 weeks long before resuming the pre-bakeout trend
 - AIA bakeouts show a persistent recovery in AIA sensitivity, generally restoring most but not all of the sensitivity lost since the last bakeout
- Most lines are fairly smooth, fairly flat (with slight downward trends), and fairly close to unity (+/- 25% 1-sigma, which agrees with our estimated calibration uncertainty)
- AIA 304 Å channel declined ~linearly for a long time, but recently (as of late 2011 or so) appears to have flattened out and begun to recover
 - May be associated with an AIA bakeout in Sept 2011
- AIA 335 Å channel shows notable variation on timescale of solar rotation
 - Indicates that there's something wrong with either the EVE data or the AIA bandpass (effective area)
 - It's probably the AIA bandpass, but we've tried a number of tweaks and find it difficult to come up with anything that is reasonable and that eliminates the variability in the ratio



Questions for the EVE team



- Is there really a transient in the EVE irradiances for a week or so following a bakeout?
- Is it possible that higher-order contamination in MEGS-A might be responsible for the solar-cycle variations in the 335 Å channel?
- Is it possible that adjustments to the EVE irradiance in the 304 and 335 Å bands might eliminate the apparent recovery we see in the AIA 304 Å channel sensitivity (or will they make that recovery appear even stronger?)