Observing "EIT waves" with SWAP, EIS and AIA

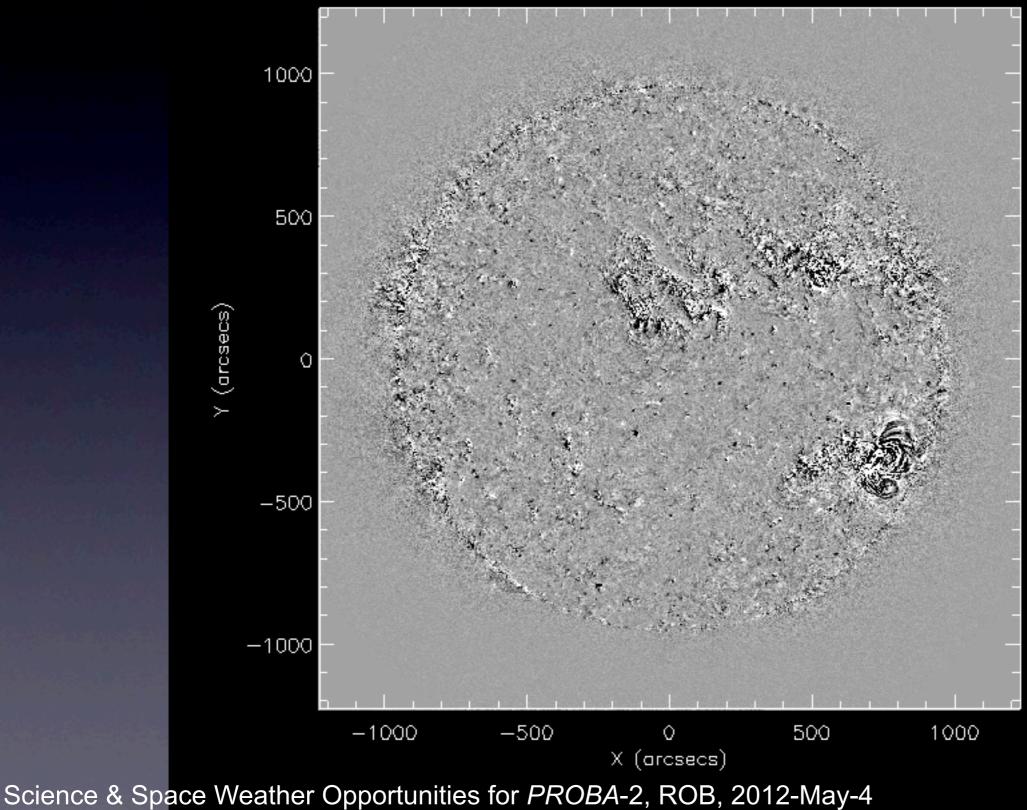
David Long¹, Dan Seaton², Louise Harra¹, Len Culhane¹ I; Mullard Space Science Laboratory, 2; Royal Observatory of Belgium <u>dml@mssl.ucl.ac.uk</u>





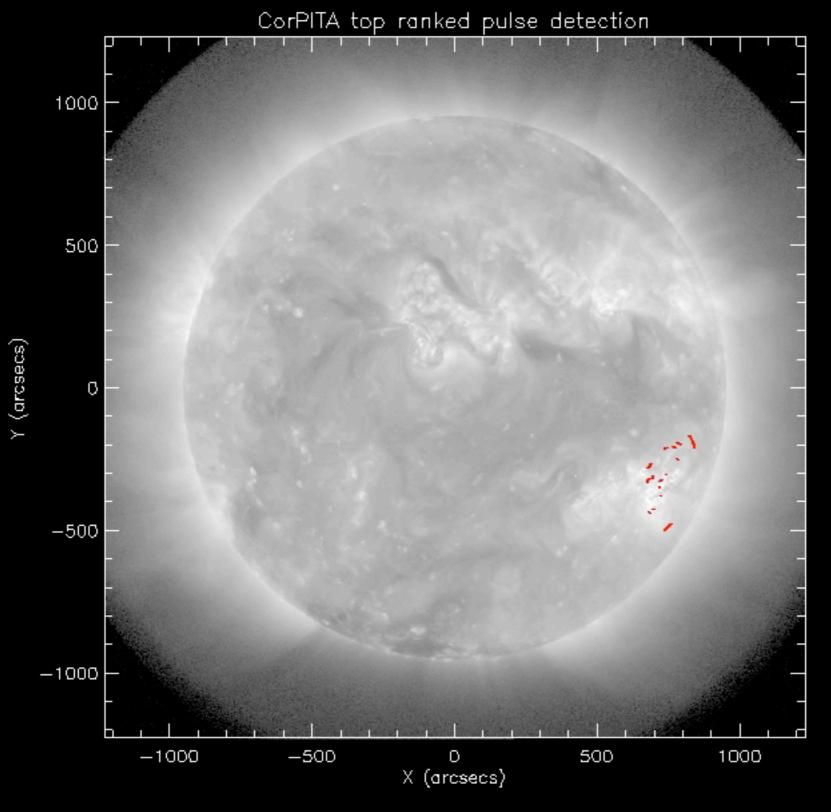
"EIT waves"

193 Å 7-Jun-2011 06:16:07.840



dml@mssl.ucl.ac.uk

Detected "EIT wave"



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Theories

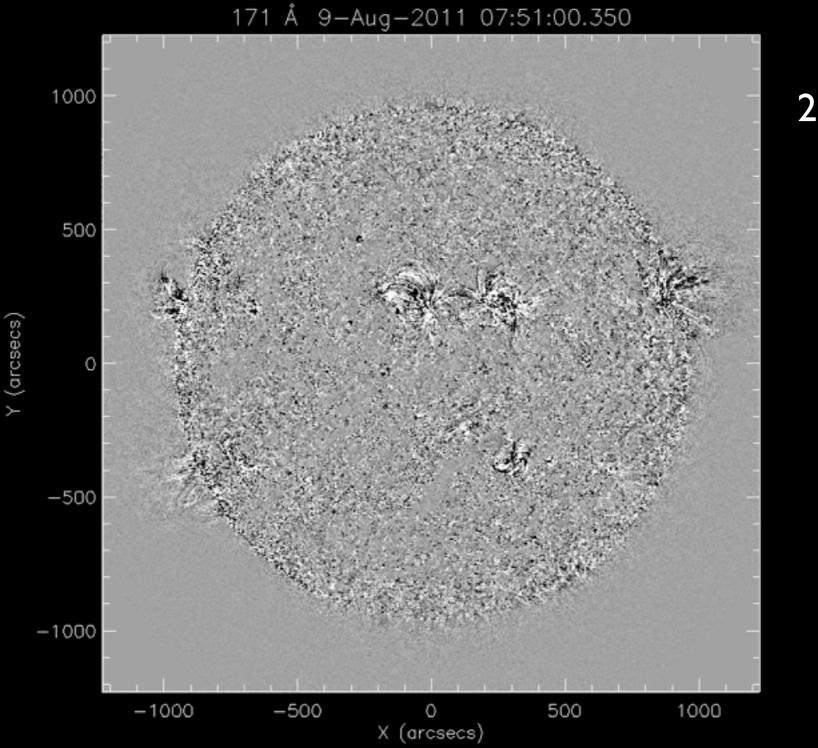
- Waves
 - Fast-mode, Slow-mode, Soliton, Shock waves
 - e.g., Thompson et al. (1998), Wang (2000), Ofman & Thompson (2002), Podladchikova et al. (2010), Wills-Davey et al. (2007), Grechnev et al. (2008)
- Magnetic field restructuring
 - Joule heating, small-scale reconnection
 - e.g., Chen et al. (2002), Delannée et al. (2008), Attrill et al. (2007)
- Both

Zhukov & Auchère (2004), Cohen et al. (2009), Downes et al. (2011), Liu et al. (2012)

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AIA

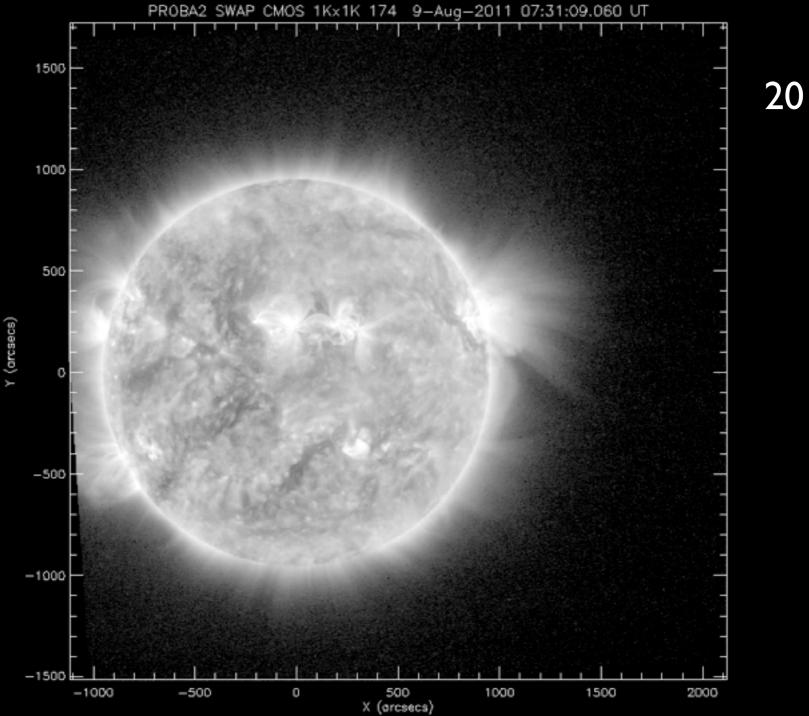


2011-Aug-9

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SWAP

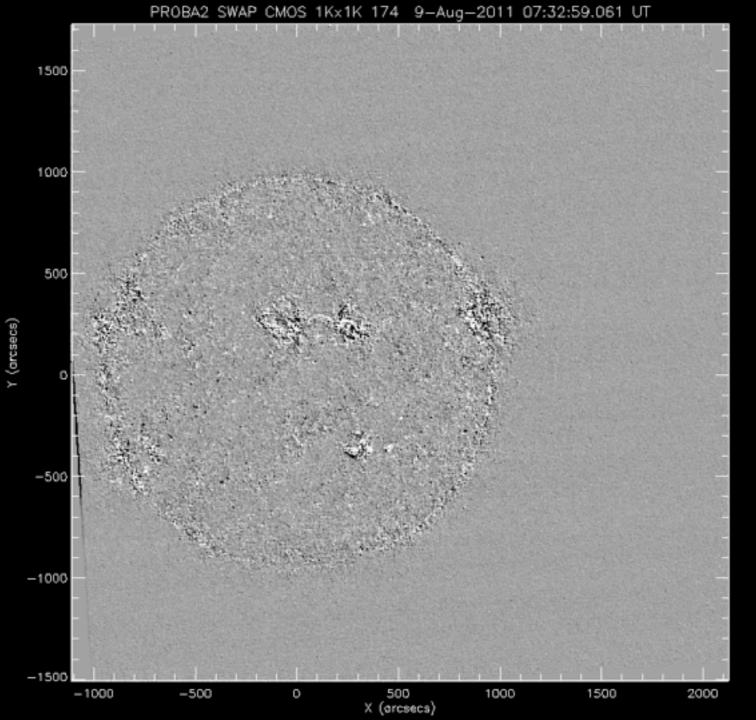


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SWAP

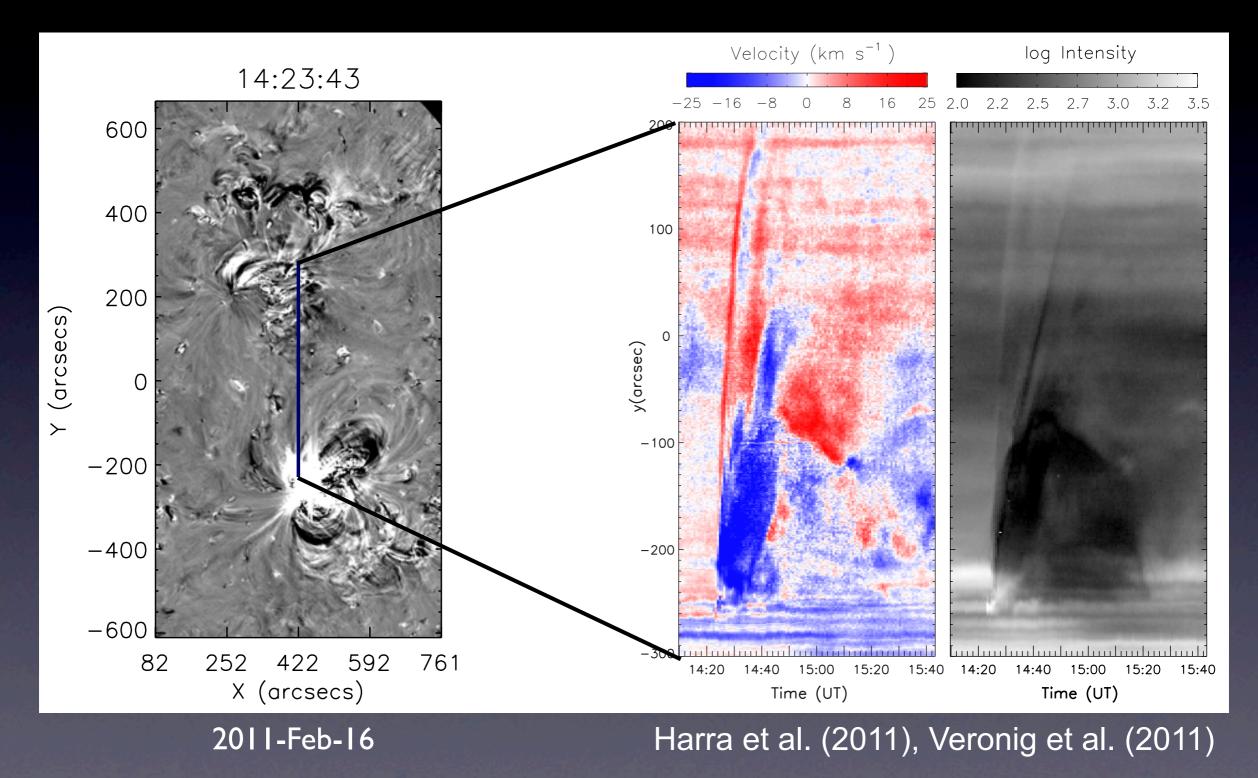


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EIS



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Joint Observing Plan

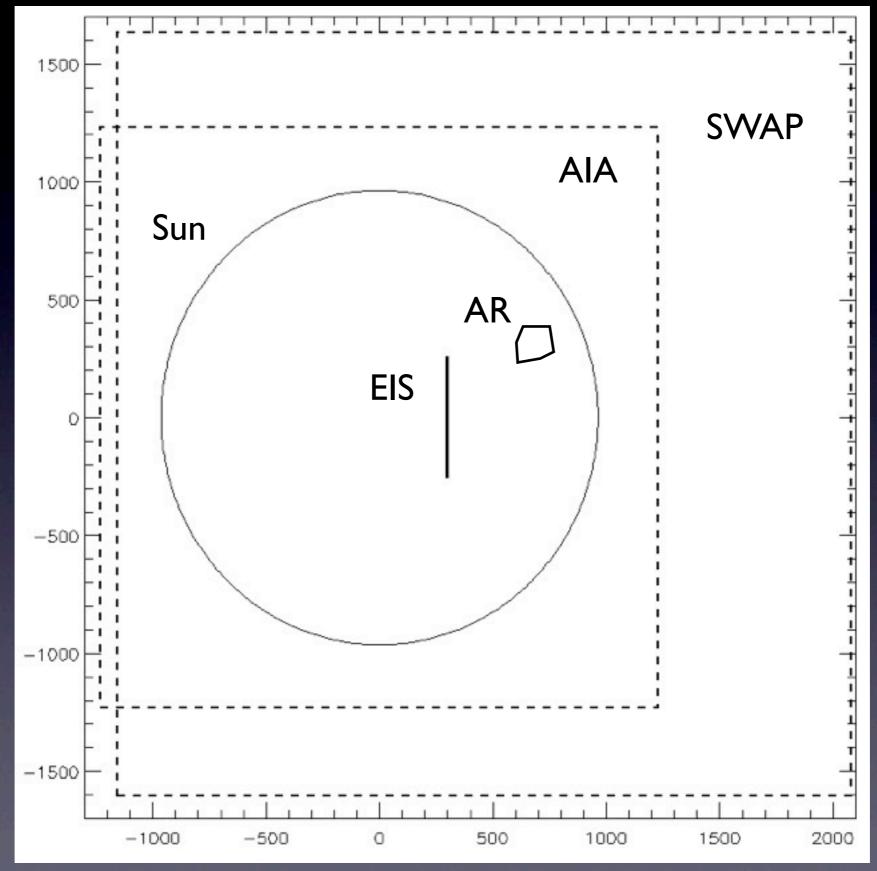
(HOP 207)

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- Proba-2/SWAP:
 - Off-pointed with high-cadence, high-intensity images (174A @ 100s nominal cadence)
- Hinode:
 - XRT used to identify flare in target active region, triggering EIS
 - EIS used to get spectroscopic observations of "EIT Wave" pulse
 - Multiple density-sensitive line ratios across a range of temperatures
- AIA;
 - High-resolution, high-cadence low coronal observations

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Joint Observing Plan



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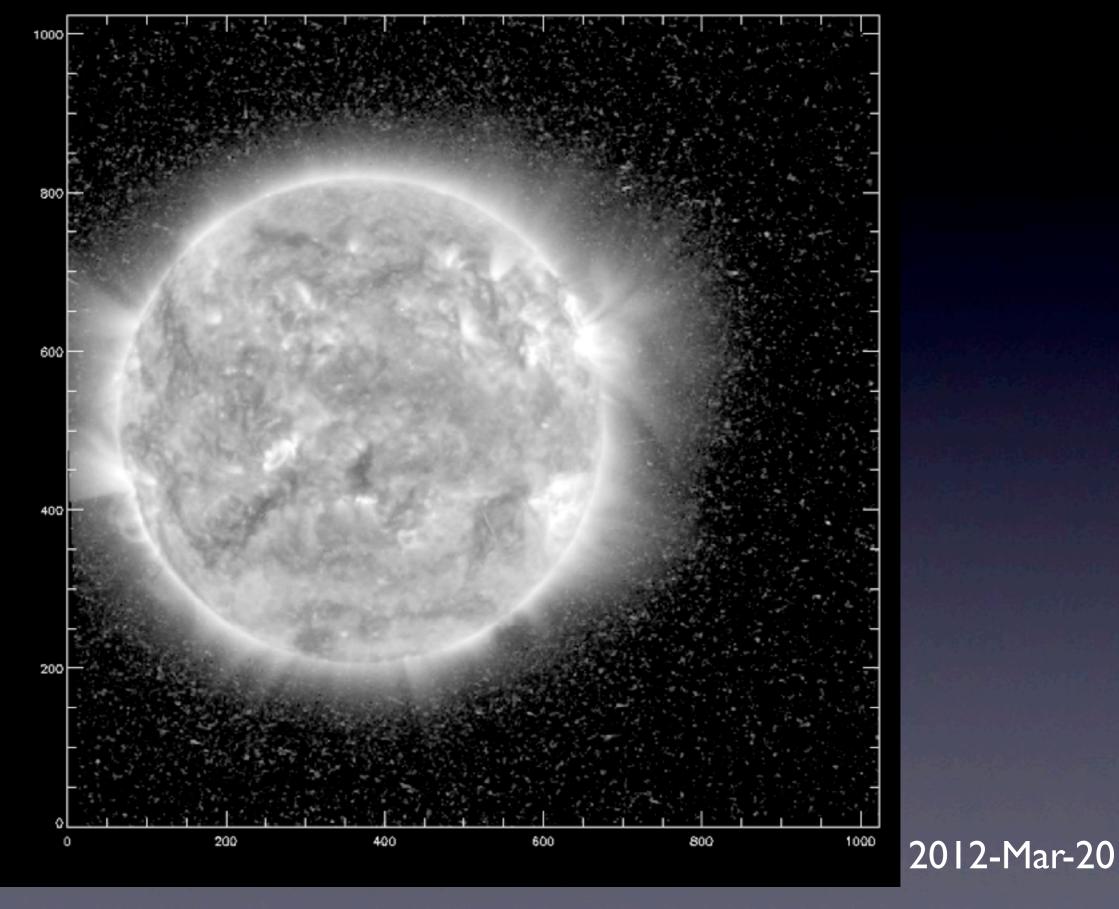
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So far..

- 3 observing runs; 12 & 20 March, 2 April
 - No successful observations
- Some issues on all occasions
 - Hinode manoeuvers, Proba-2 server issues etc.
- EIS observing plan now fully incorporated
- Actively hunting for promising active regions

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