

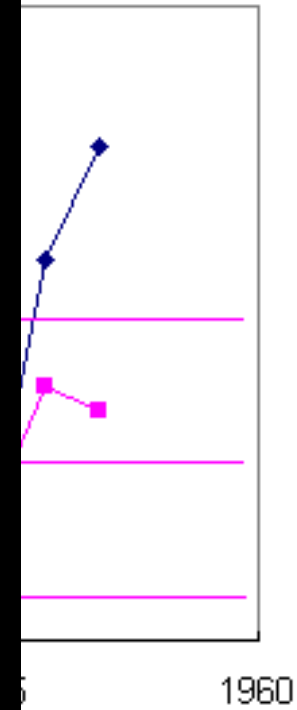


Solar Physics at RAL

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Division



Solar Physics at RAL: ...why bother?



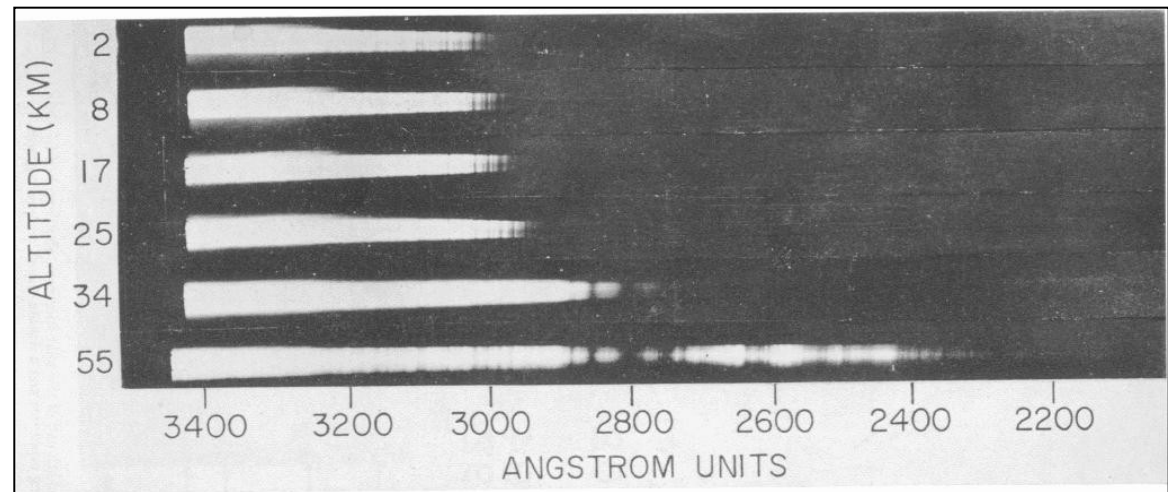
Solar Physics at RAL: ...when did it all start?



Solar Physics at RAL:

...when did it all start?

- The Sun – the first target of the space age... why?
 - Lots of photons & stuff you can't see from the ground
- The dawn of space astronomy - 10 Oct 1946 – the solar UV spectrum detected from a V-2 sounding rocket launched by NRL from White Sands



Solar Physics at RAL:

...when did it all start?

- UV spectroscopy techniques developed by Robert Wilson's team at Harwell (from 1958), to look for evidence of fusion in the ZETA device - powerful techniques for studying astrophysical plasmas
- e.g. Fawcett & Gabriel found features in the 170–220 Å ZETA spectrum from iron (from ZETA's steel lining), also seen by Allen & Jordan, as iron features in the solar spectrum



Solar Physics at RAL:

...when did it all start?

- The group moved to Culham in 1962
- Wilson led a programme of UV solar observations with rocket-borne instruments, including the first flights of stabilized Skylark rockets
- The Astrophysics Research Unit (as it was then) ultimately became part of RAL

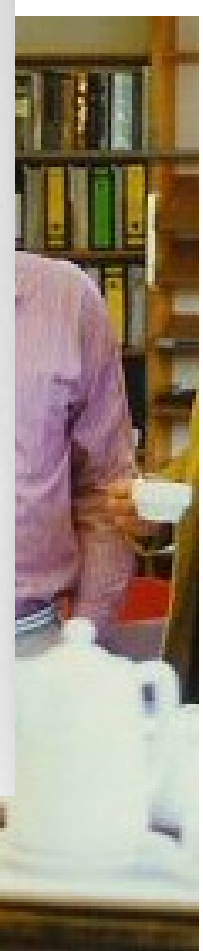
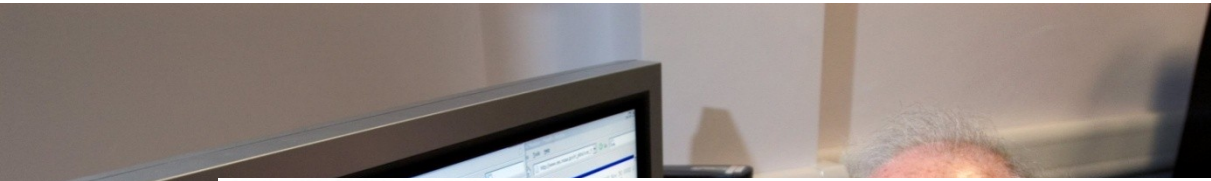


RAL Space – A world-leader in solar physics for the last four decades:

SMM	(NASA)	(1980-1989)	(PI)
CHASE/Spacelab 2	(NASA)	(1985)	(PI)
Yohkoh	(ISAS)	(1991-2001)	
SOHO	(ESA/NASA)	(1995 to date)	(PI)
Coronas-F	(RSA)	(2001-2005)	
Coriolis	(USAF)	(2003-2011)	
Hinode	(ISAS/JAXA)	(2006 to date)	
STEREO	(NASA)	(2006 to date)	(PIx2)
SDO	(NASA)	(2010 to date)	
Solar Orbiter	(ESA)	(2017...)	(PI)

Flown 17 instruments, 10 spacecraft, 6 PI spacecraft – all since 1980.

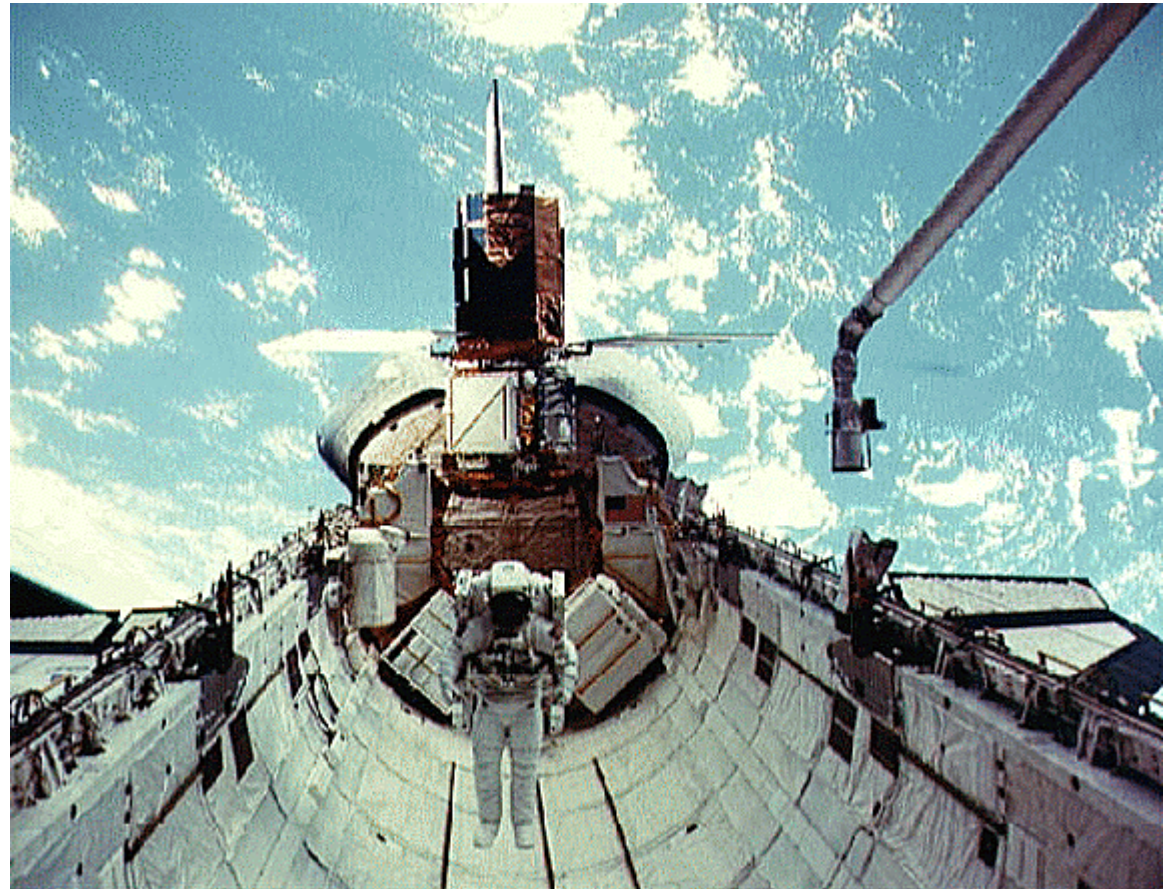
Also: Early sub-orbital rockets and more recent ones – SERTS, MOSES, EUNIS



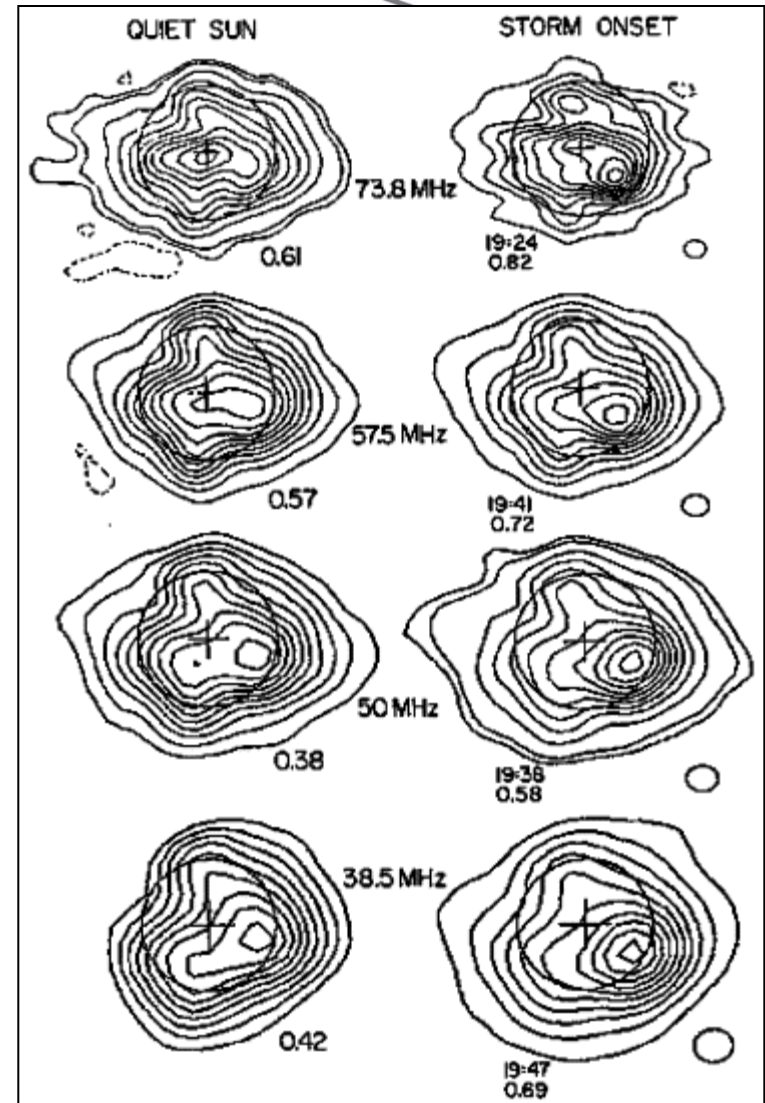
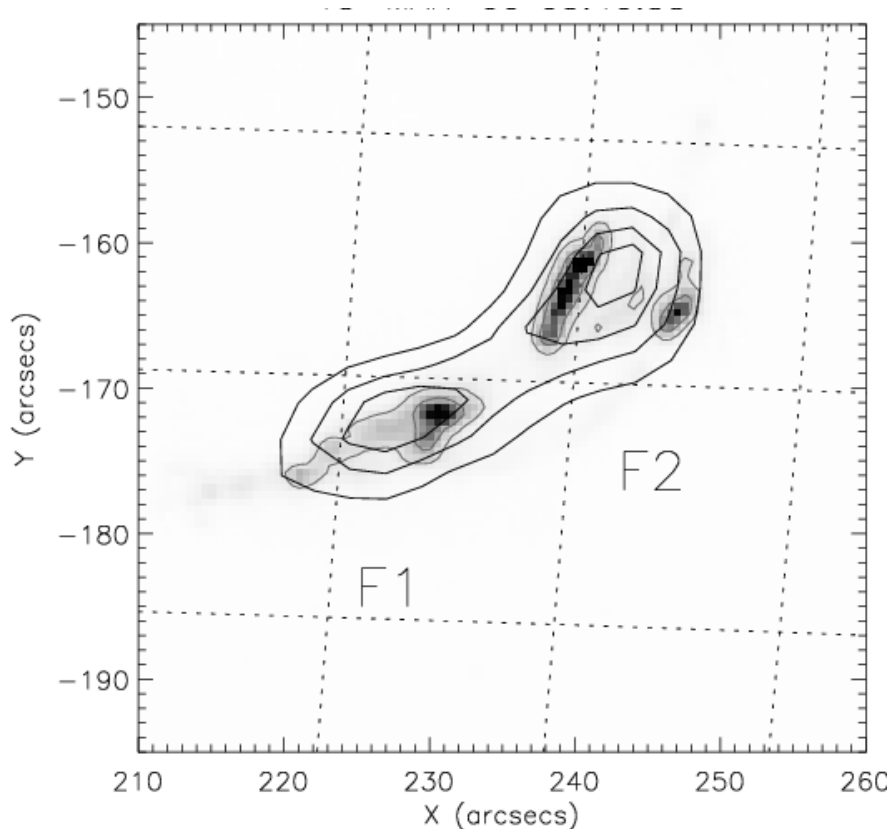


Solar Maximum Mission

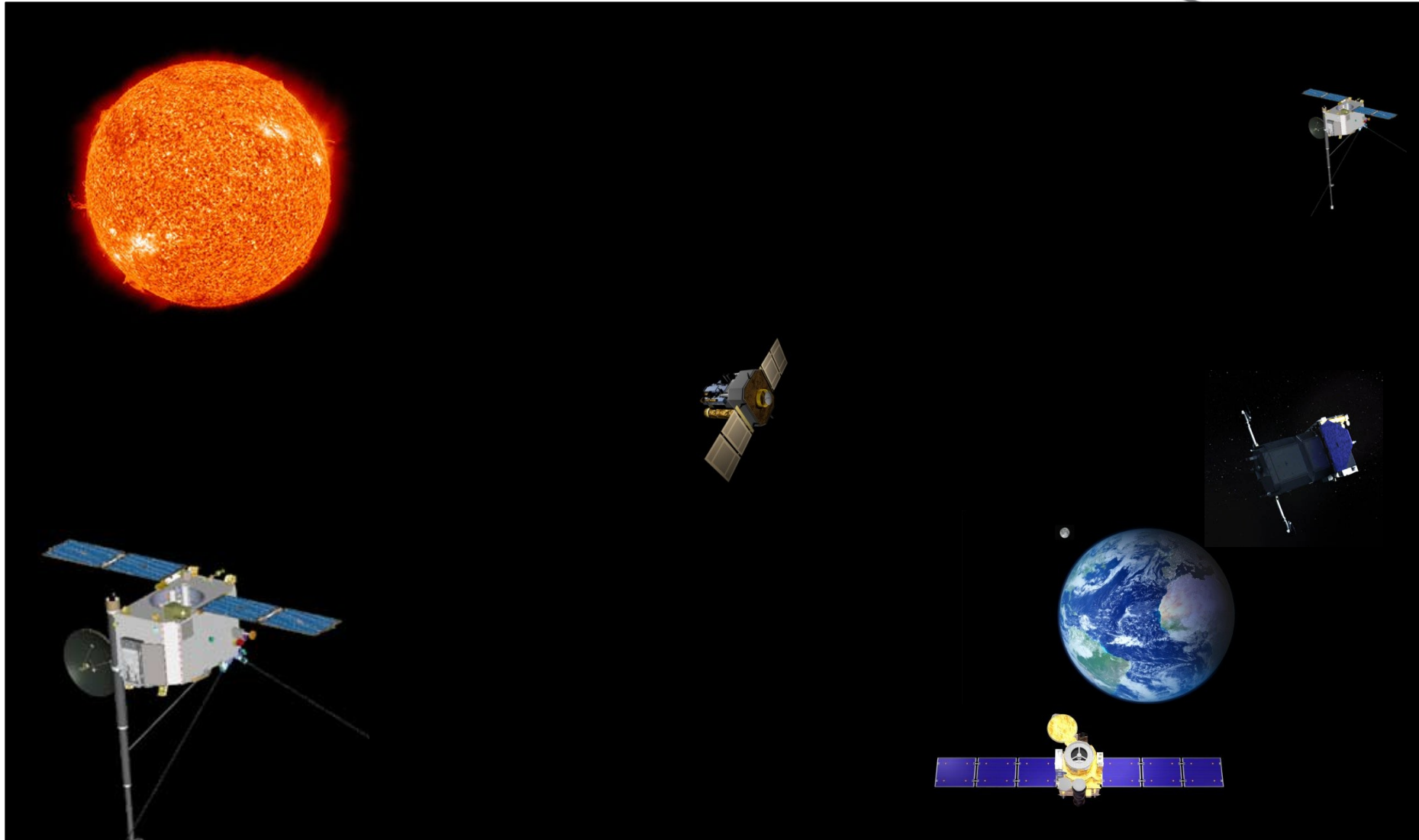
The first substantial mission for RAL



- Major advances in solar flare research.... but it was very much solar physics by pen-plotter, contours and graph paper....



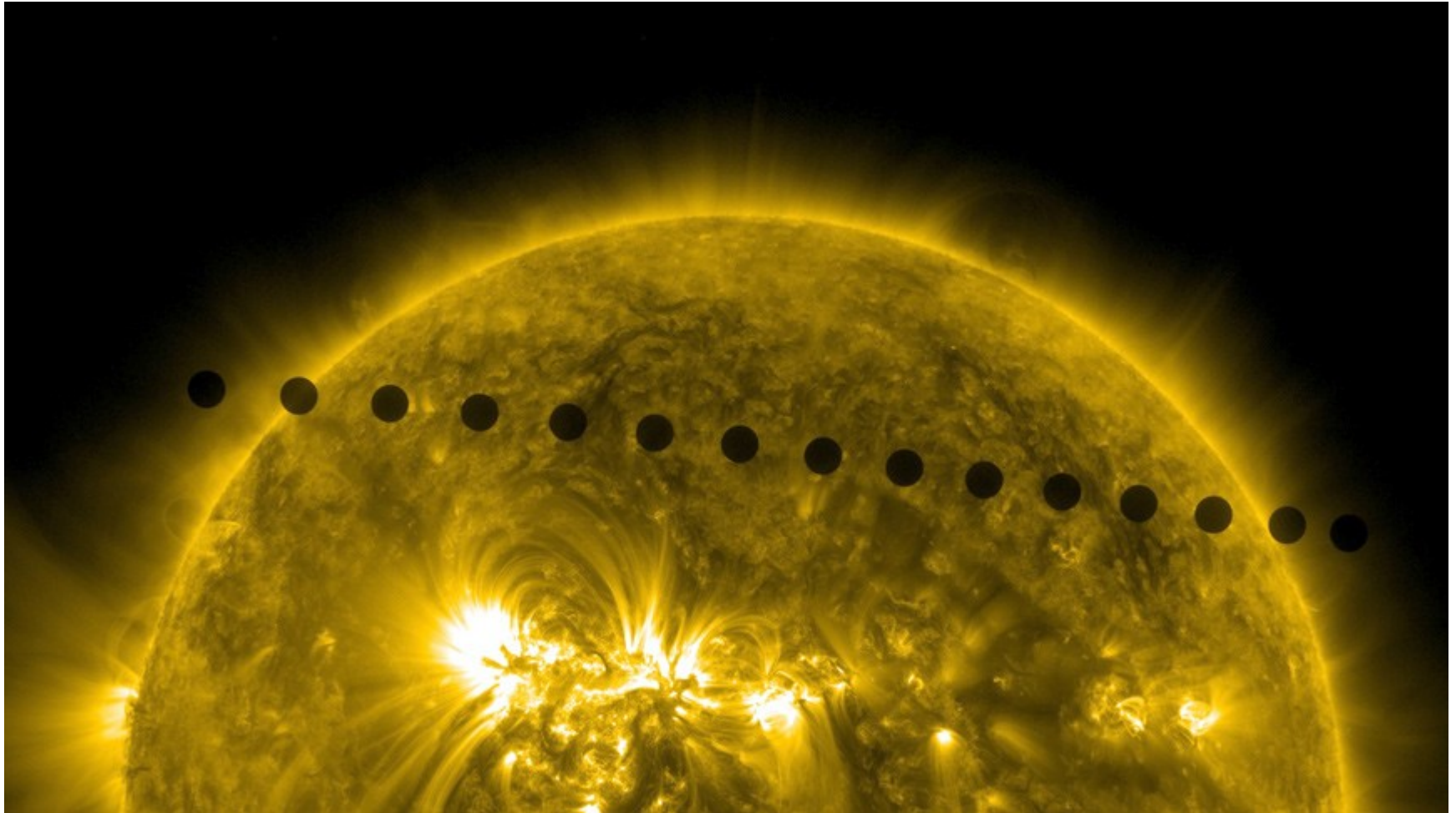
What are we doing now?

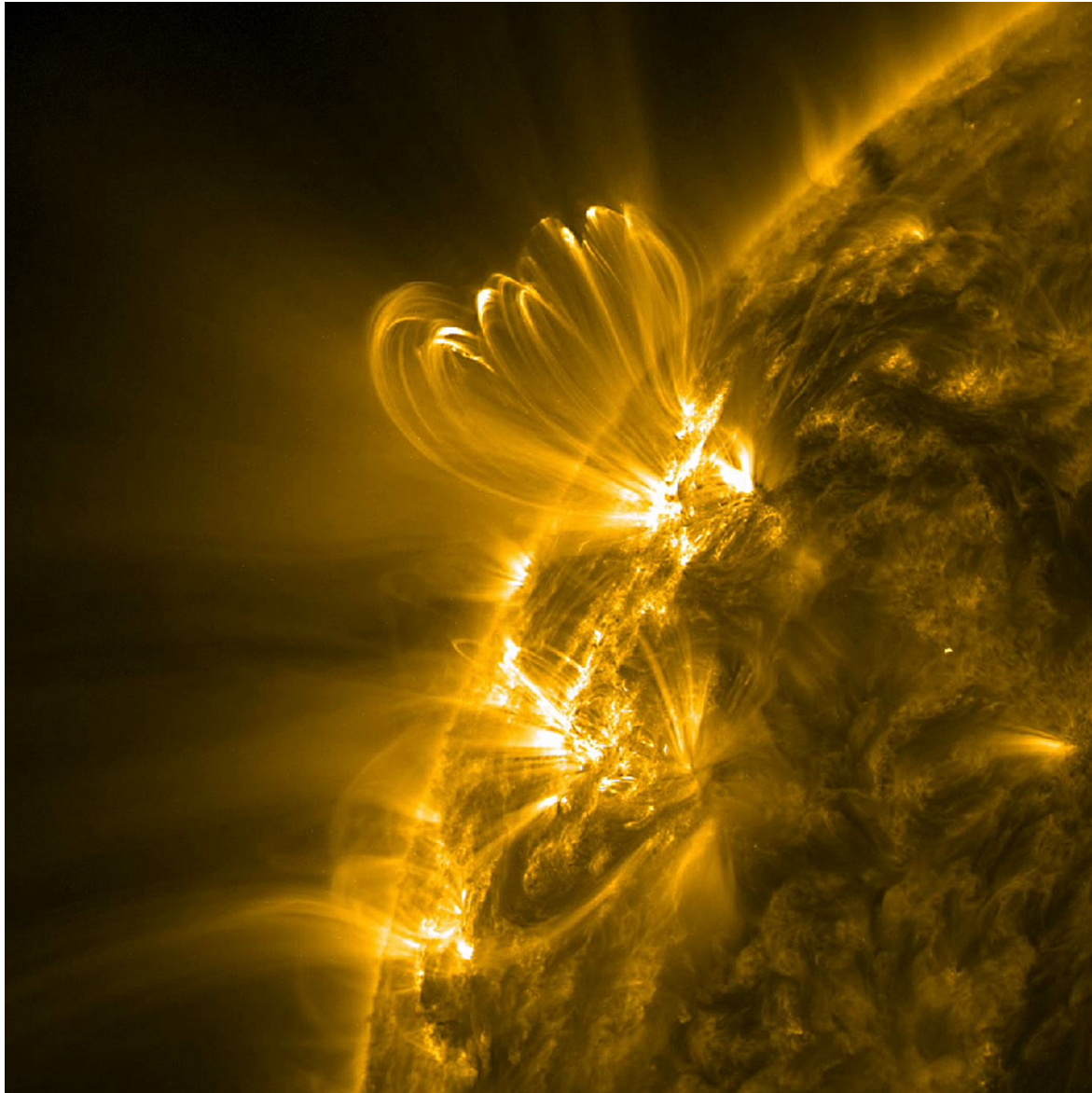


Solar Physics at RAL:

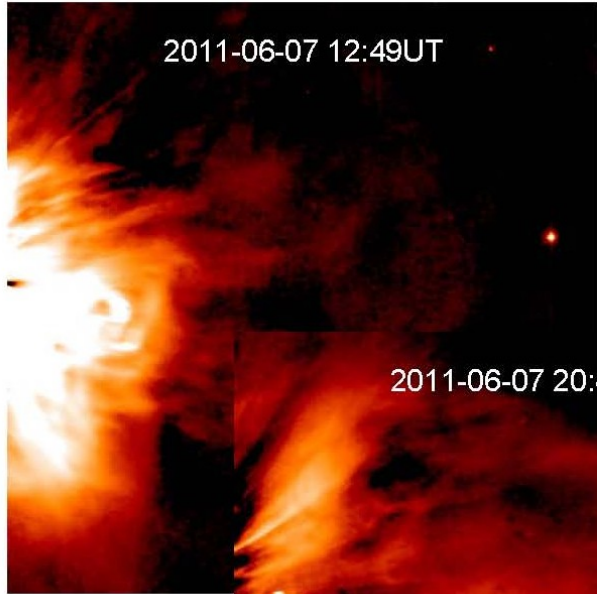
to be continued.....

SPARE SLIDES....

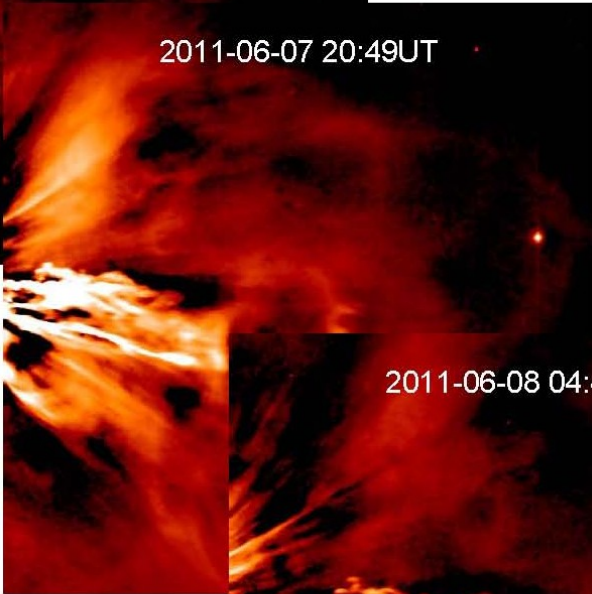




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