

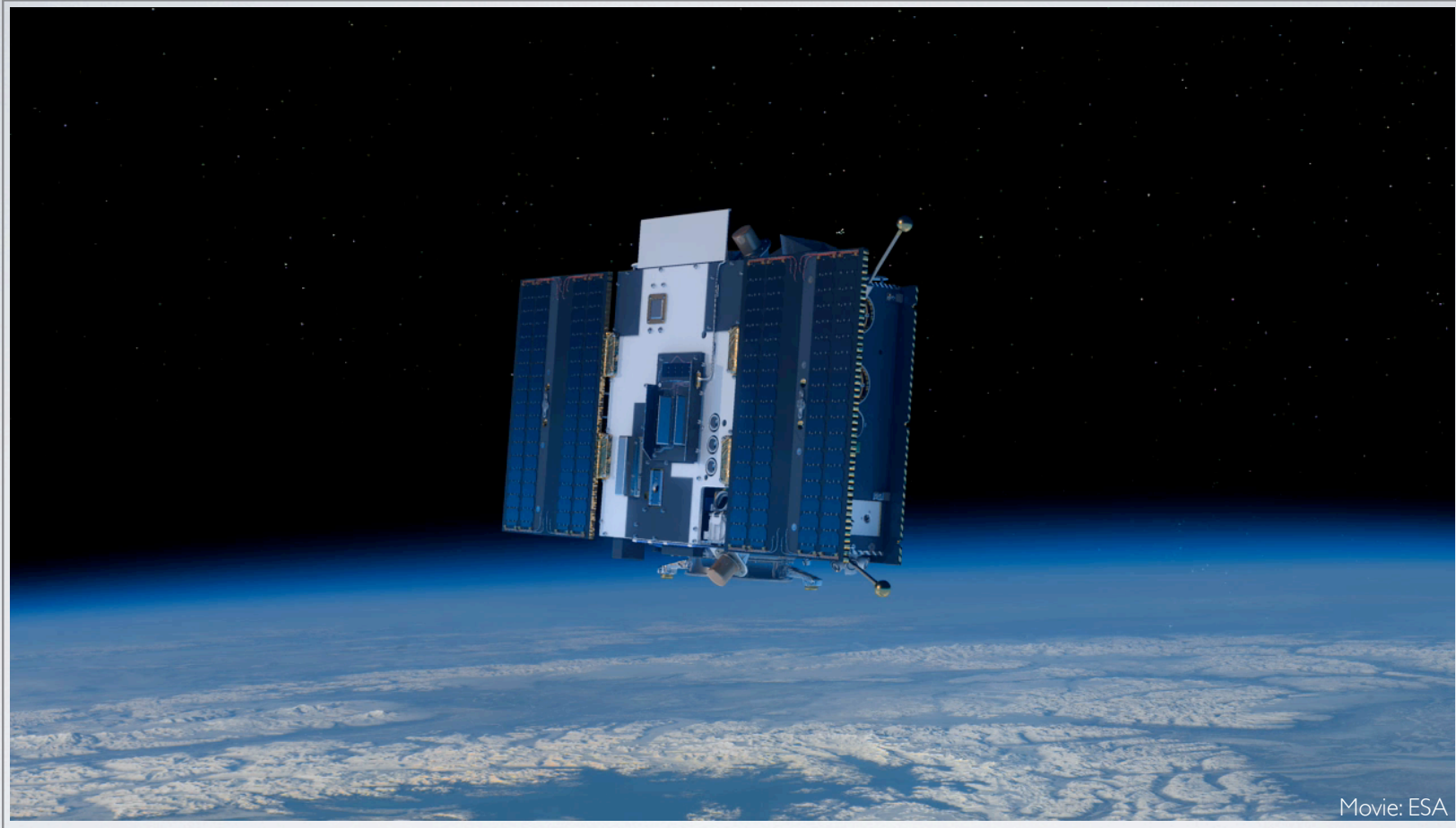
SPACE WEATHER SHOPPING PROBA2

Anik De Groof
European Space Agency



PROBA2

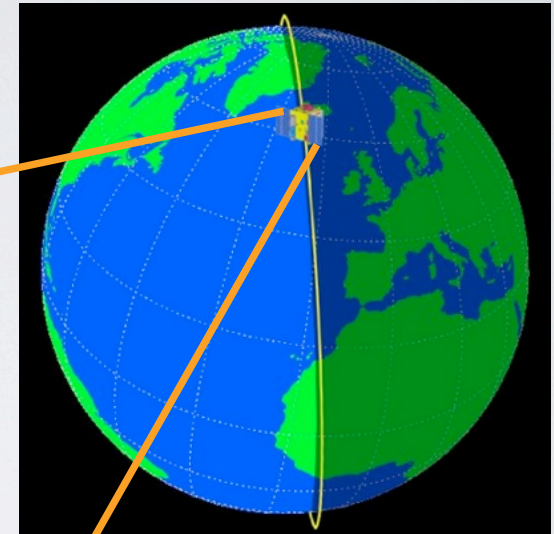
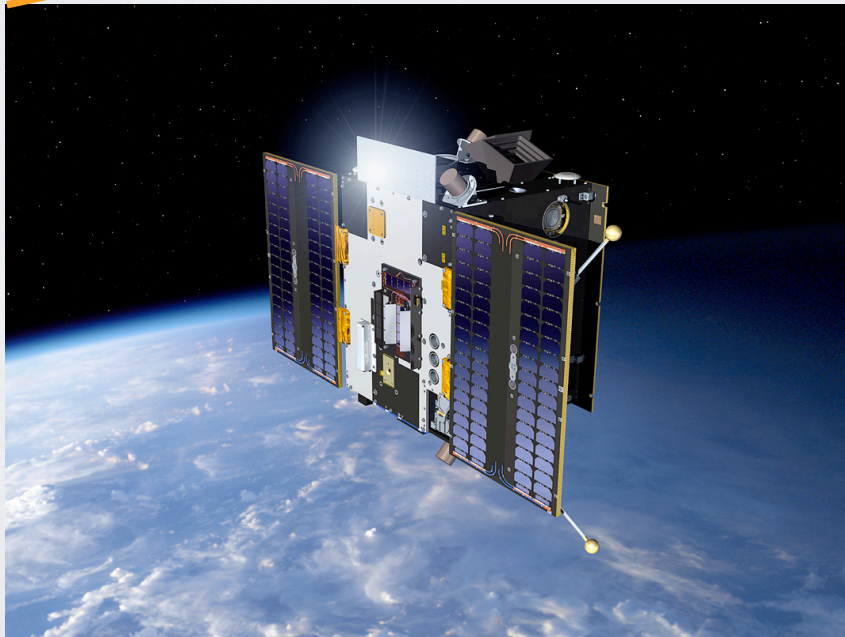
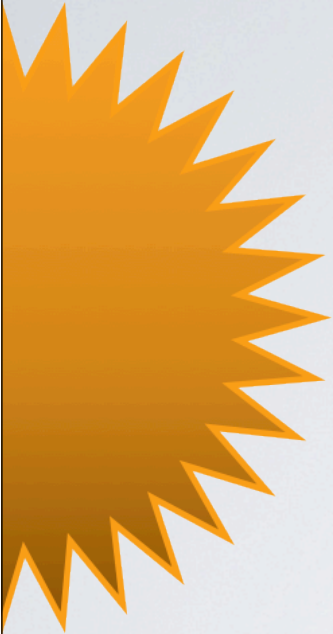
Project for **O**n-**B**oard **A**utonomy
ESA microsatellite in sun-synchronous orbit



ESA TECHNOLOGY & SCIENCE

4 innovative instruments - 17 technological experiments
SWAP and LYRA observe the Sun in (E)UV and XUV
continuous observations since Jan 2010

PROBA2

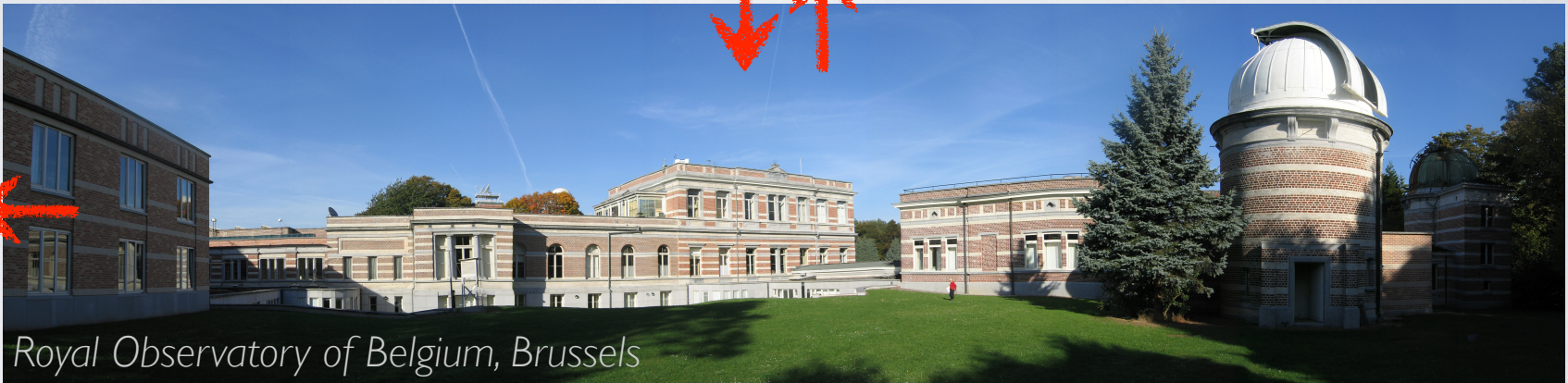


725 km altitude

Sun-synchronous orbit
("dawn-dusk")



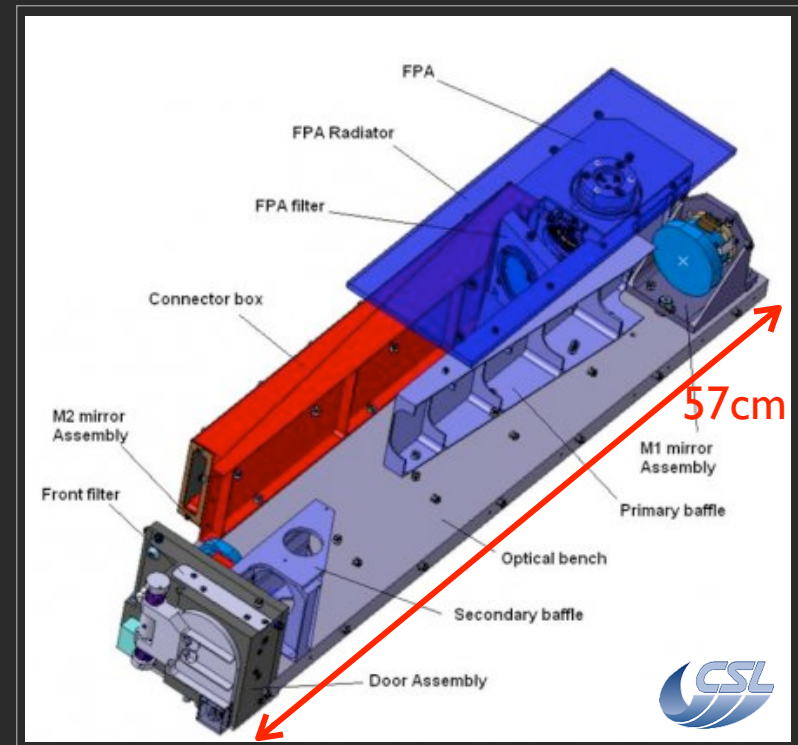
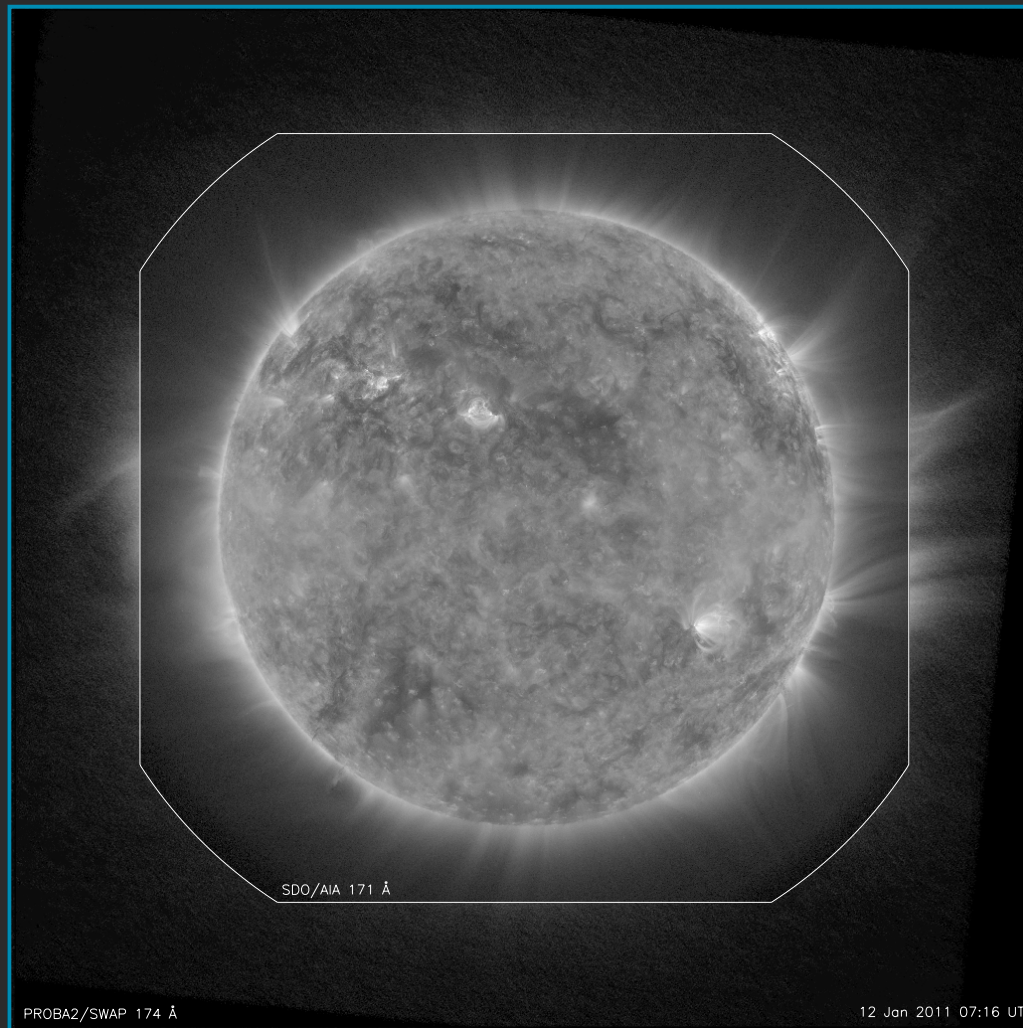
Redu, Belgium + Svalbard, Norway



Royal Observatory of Belgium, Brussels

PROBA2 SCIENCE CENTER

high level of automatization & flexibility
9-10 satellite contacts per day
near realtime data & flexible commanding



Exercise in miniaturization:
off-axis Ritchey-Chrétien scheme

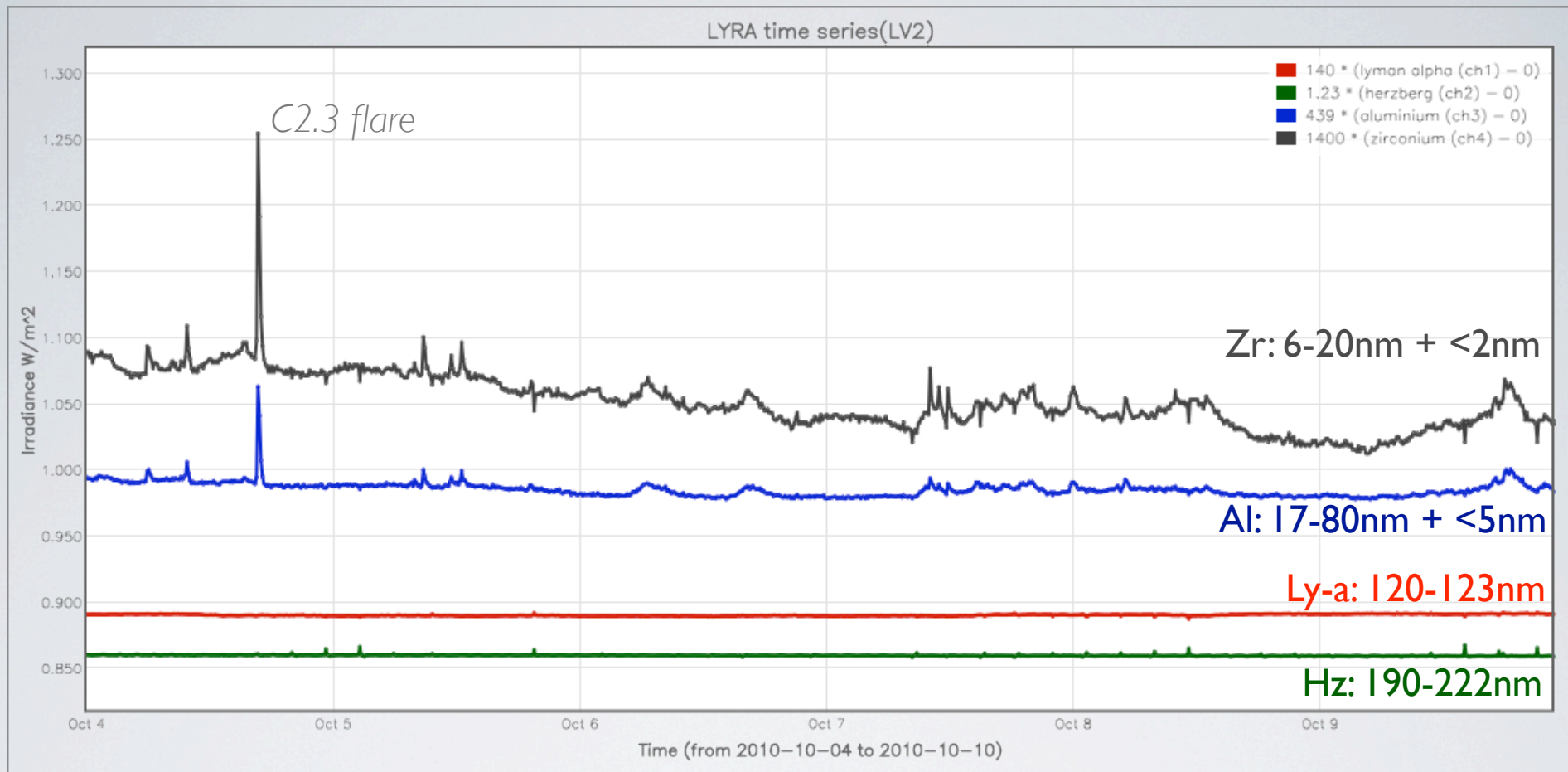
Seaton et al. 2012, Solar Physics

Halain et al. 2010, SPIE 7732

SWAP EUV IMAGER

1 million° corona in EUV 17.4nm ☼ 1-2mins cadence (upto 20s)

large FOV ☼ 1Kx1K CMOS APS



LYRA RADIOMETER

3 instrument units - 4 spectral channels per head
3 types of detectors: diamond PIN/MSM & silicon
high cadence 50ms (up to 10ms)



Welcome to the PROBA2 Science Center

Home SSA Services Contact Acknowledgments

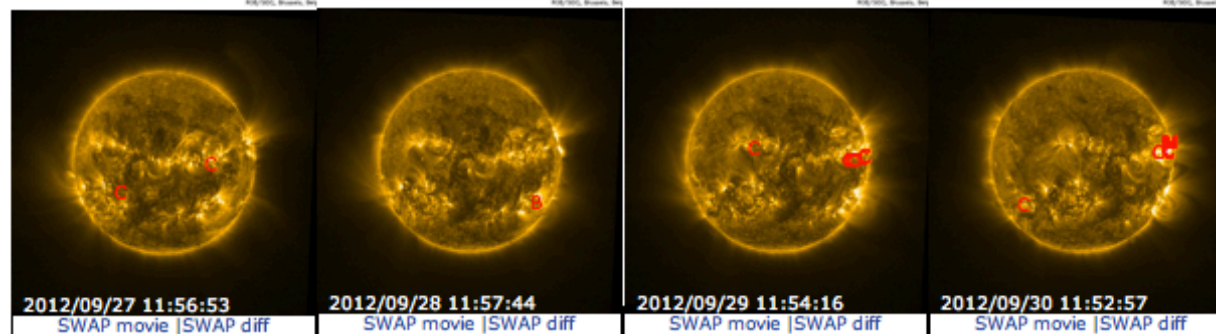
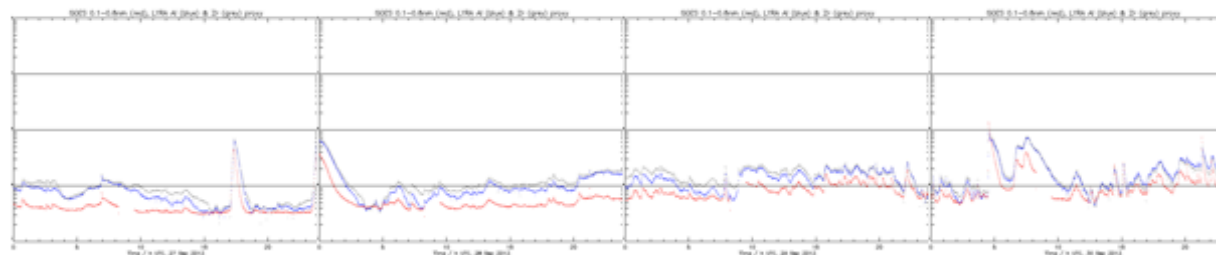
Home

Space Situational Awareness, services provided by PROBA2

proba2.oma.be/ssa

<<<27d <<4d <1d 1d> 4d>> 27d>>> Today

2012-09-27 2012-09-28 2012-09-29 2012-09-30

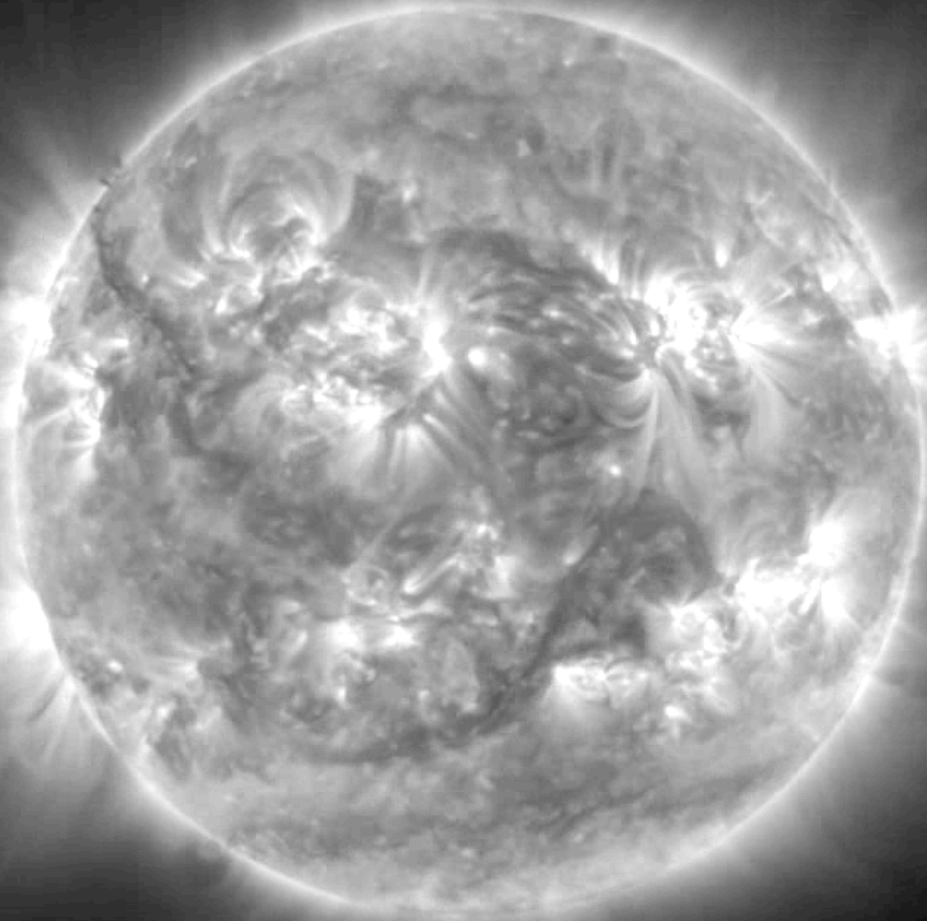


Date	Start	Peak	Stop	Flare class	Location	NOAA region
2012-09-30	23:17	23:39	23:44	C9.9	N07W86	1575
2012-09-30	22:39	22:43	22:47	C1.9	N07W85	1575
2012-09-30	22:01	22:06	22:09	C2.8	N07W85	1575
2012-09-30	21:16	21:20	21:23	C7.1	//	//
2012-09-30	20:57	21:01	21:04	C1.6	//	//
2012-09-30	20:04	20:08	20:10	C2.3	//	//
2012-09-30	15:01	15:10	15:14	C2.5	N07W81	1575
2012-09-30	14:21	14:26	14:33	C2.3	N07W81	1575

Lines indicated in yellow correspond to events on the (non-visible) backside of the sun.

If it is available, a detail of the event can be seen by clicking on the table row.

2,5 YEARS OF PROBA2 DATA



SWAP Feb '10 - Oct '12

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