



**UK SPACE**  
AGENCY

*making the UK the Place for Space*

# Opportunities and activities

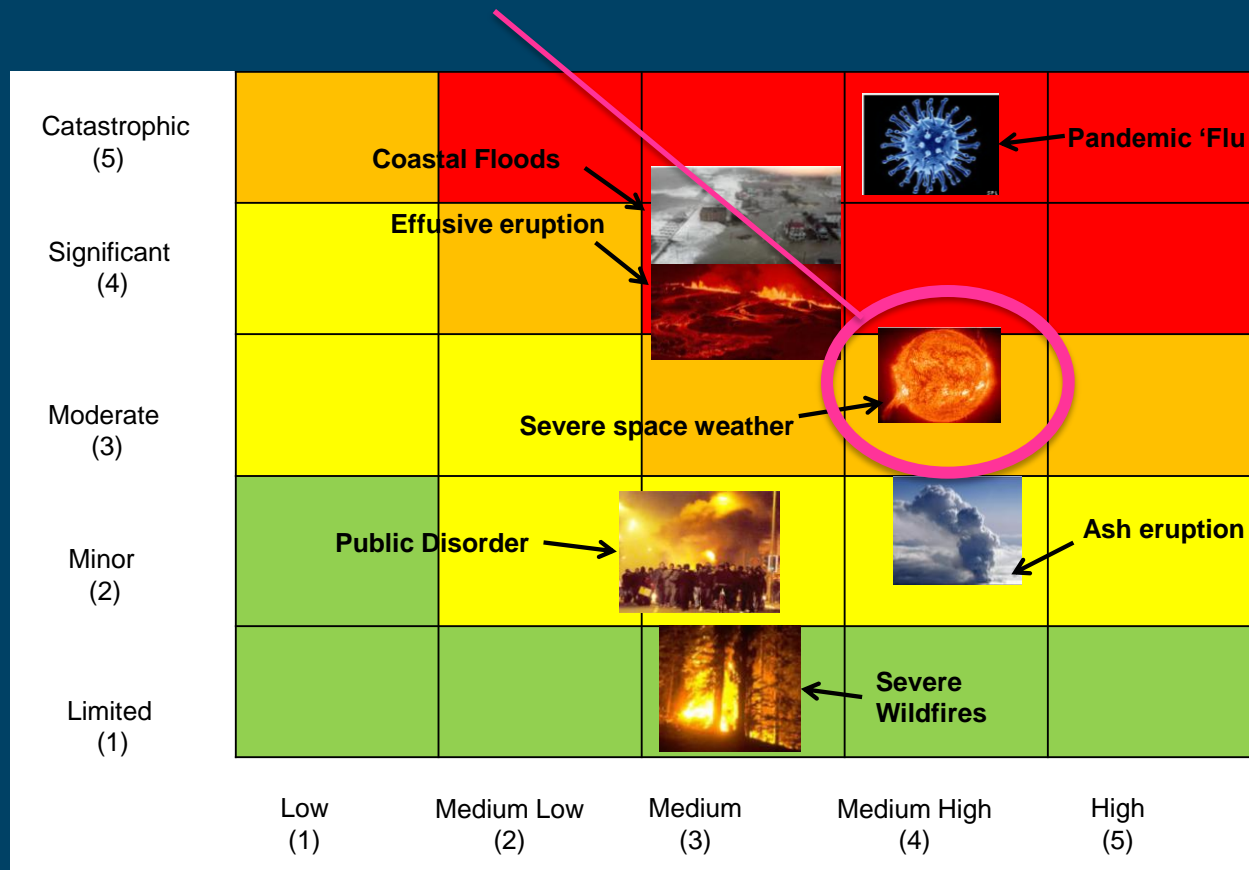
A UK space agency perspective

May 2015

<http://www.bis.gov.uk/ukspaceagency>

# Background

## ➤ Space weather risk high on national risk register



BIS are the lead government department and the risk owner

# Background

- UK have subscribed to the ESA SW programme – €7M
- National Programme?
- Met office have created their space weather operations centre, MOSWOC



**Met Office** Space Weather Technical Forecast

**Space Weather Technical Forecast (Ref: M043)**  
 Issued on Thursday, 20 November 2014 at 11:04 local

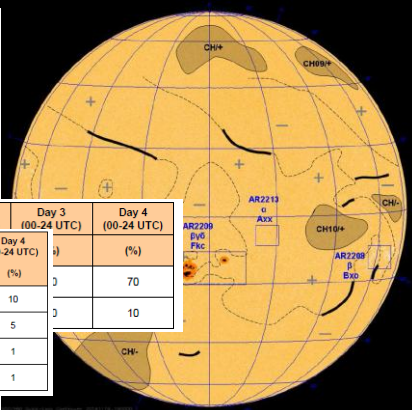
This scientific guidance document provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the NOAA Space Weather Scales <http://www.swpc.noaa.gov/NOAAscales/index.html>

**Space weather Forecast UPDATE: 1200 UTC: No significant changes**

Developments since last C7.6 at 0641 UTC:

	Radiation Storms	Level	Past 24	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (%)	Day 2 (%)	Day 3 (%)	Day 4 (%)	
Probability (Exceedance)							
Minor or Moderate	G1 to G2	No	15	15	15	10	3
Strong	G3	No	5	5	5	5	3
Severe	G4	No	1	1	1	1	
Extreme	G5	No	1	1	1	1	

**Analysis of Space**  
 into the western hem  
 Solar Activity: Solar from AR2209. There disc, the largest and western hemisphere coronagraph imagery.



# National Space Security Policy

## Objective 1:

“To make the United Kingdom more resilient to risks to space services and capabilities, including from space weather.”

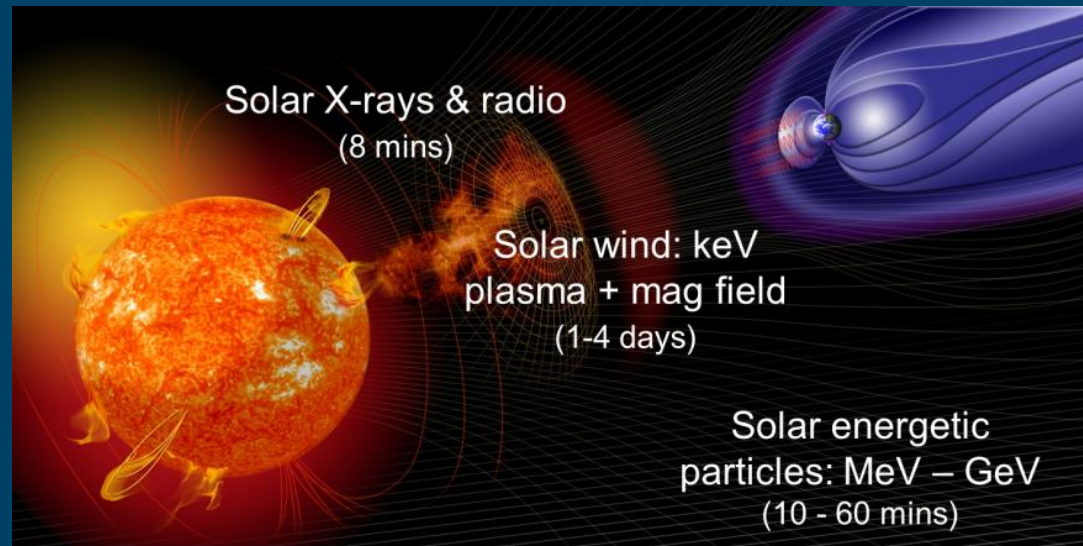
- Increase resilience through reducing vulnerability of essential infrastructure
  - A **proportionate** approach combining **protective measures**, **forecasting** and **fall-back capabilities**
  - Cross government work to improve national resilience
  - International cooperation (US, ESA, EU etc.)
- Noting responsibility will rest largely with owners and operators of space services and infrastructure, with oversight provided by lead Government departments.



# Moving forwards

## ➤ Time line to work with

- Reasonably well placed for solar disk observations (SDO etc)



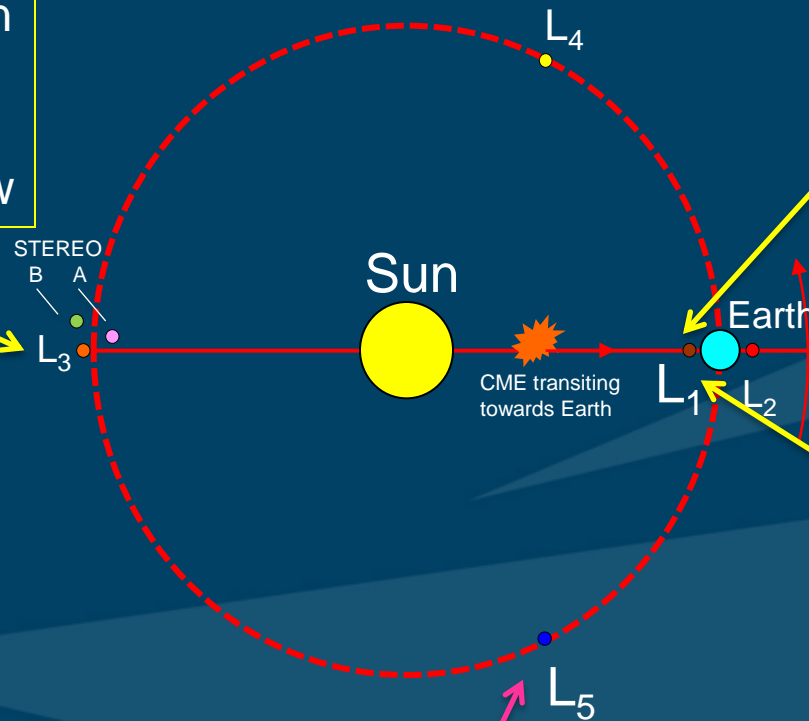
- Not so well placed for observing solar wind, CMEs etc
- ## ➤ Concern over reliance on end of life science missions



# What we have

## Key measurement capabilities are at risk

STEREO A – behind sun  
STEREO B – is not well  
Not a good angle of view



SOHO, ACE

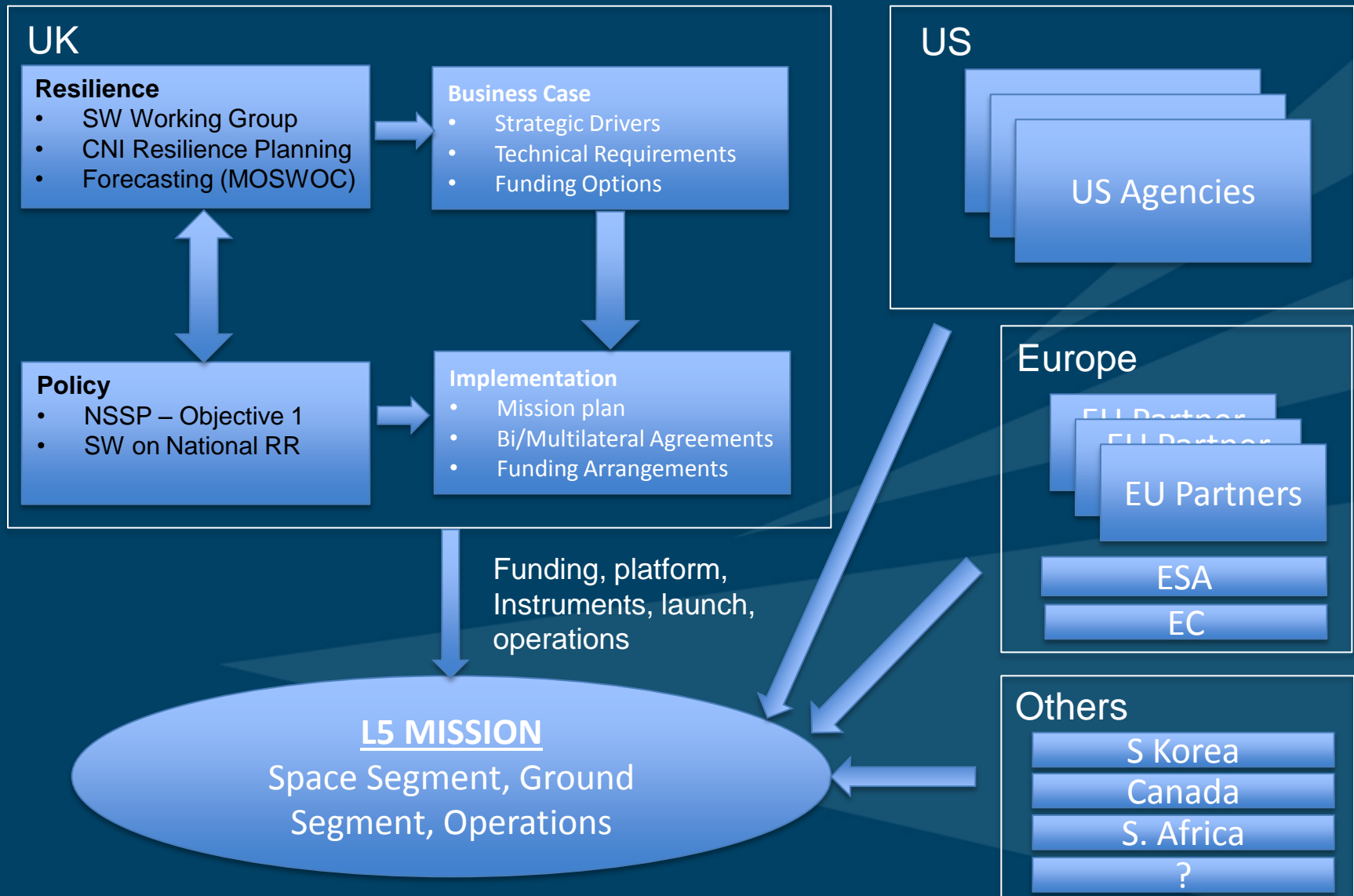
Potential imminent loss of CME imagery

DISCOVER is on the way to L1 but no coronagraph



Proposed mission to L5

# National Drivers & Future Partners



## ➤ Business case – IPSP

- Space weather social/economic cost, economic benefit of forecast, US & South Africa engagement, knowledge exchange science, instrumentation and forecasting, service level definition, mission feasibility

## ➤ Cost & funding routes – CSR / SDSR

- Comprehensive spending review / Strategic defence and security review

## ➤ Implementation routes – Building partnerships

- Nationally and with international community

## ➤ Next steps

- Ministerial mandate / White paper (working with Met Office)
- Refine technical requirements – This Meeting
- Refine proposals



# Questions ?

# Come & Talk to us