

Communication and Coordination During Extreme Space Weather Event

Siqing Liu

National Space Science Center, CAS

Center for Space Science and Applied Research, CAS

Outline

- I. Is it necessary for better communication among SWx providers, especially about ESW?**

- II. Where shall we start from? And what shall we benefit from it? What resources are needed for communication?**

- III. Is there a standardized ESW description/scale/impact characterization? And should we have one?**

Outline

- I. **Is it necessary for better communication among SWx providers, especially about ESW?**

- II. **Where shall we start from? And what shall we benefit from it? What resources are needed for communication?**

- III. **Is there a standardized ESW description/scale/impact characterization? And should we have one?**

Necessity

I. **Good communication can fill knowledge gaps, broaden the points of view of forecasters, improve the accuracy of forecast, especially in the prediction of solar eruption and geomagnetic storm.**

Scenario	A : A large ,complex active region quickly forms on the solar disk	B : A large flare erupts ,2500km/s halo CME	C : ACE detects - 100 nT Bz	D : Ground magnetometers show massive disturbances	E : Post event
What do we do now?	①Daily issue(01:00UT) <ul style="list-style-type: none"> Flare probabilities (M-class, X-class) Anticipation of eruption ②Event forecast <ul style="list-style-type: none"> Anticipation of eruption 	①Daily issue(01:00UT) <ul style="list-style-type: none"> Geomagnetic Storm probabilities Anticipation of Geomagnetic Storm ②Alerts (Flare, SPE) ③Bulletin (Chinese) ④Event forecast <ul style="list-style-type: none"> Arrival time of CME Level of Geomagnetic Storm 	None	① Alerts (Geomagnetic Storm) ② Bulletin (Chinese)	Summary (Chinese)


Necessity

- II. **Good communication can help avoid confusion or give explain to the requires.**

NASA称今年将发生毁灭性太阳风暴 可导致大规模停电

2013年02月13日 09:01

来源：凤凰科技 作者：严炎刘星

426人参与 80条评论 分享到： 更多

凤凰科技讯 北京时间2月13日消息，据英国每日电邮报道，近日美国宇航局警告称，地球即将遭受一场毕生难遇的“空间风暴”，之后英国将面临大规模停电，并将长期失去重要的通讯信号。

The Telegraph

HOME NEWS WORLD SPORT FINANCE COMMENT BLOGS CULTURE TRAVEL LIFE

Politics Obits Education Earth Science Defence Health Scotland Royal Celebrities

Science News Space Night Sky Roger Highfield Dinosaurs Evolution Steve Jones Sci

HOME » SCIENCE » SPACE

Nasa warns solar flares from 'huge space storm' will cause devastation

Exclusive: Britain could face widespread power blackouts and be left without critical communication signals for long periods of time, after the earth is hit by a once-in-a-generation "space storm", Nasa has warned.

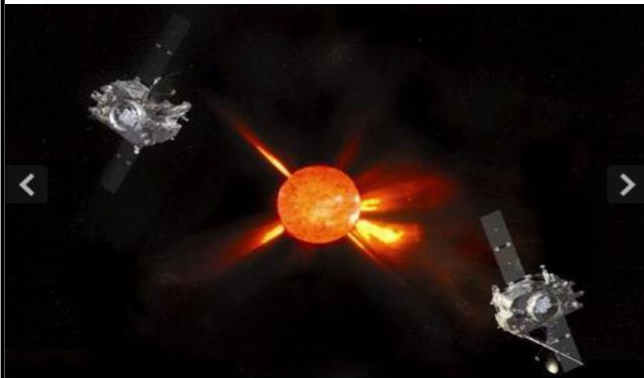


Image 1 of 5
Nasa is currently studying the effects of the Sun's power in the earth. Photo: NASA



By Andrew Hough
1:00PM BST 14 Jun 2010

Print this article

Share 0

Facebook 0

Twitter 0

Email

LinkedIn 0

+1 57

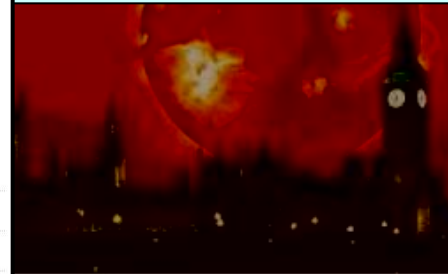
Space

News » UK News »
How about that »
Science News »
Earth News »

In Space



arns, the earth is hit by once-in-a
orm", since then Britain could face
ts and



正在研究太阳活动对地球的影响。

家电网过热，空中飞行严重受到影响。未来几年内太阳
备和重大的卫星可能停止工作。

Outline

- I. Is it necessary for better communication among SWx providers, especially about ESW?
- II. Where shall we start from? And what shall we benefit from it? What resources are needed for communication?
- III. Is there a standardized ESW description/scale/impact characterization? And should we have one?

Priority-Share

1. What to Share?

Information (model result, analysis process, forecasts, publication about ESW)

2. How to Share?

Develop a platform among SWx providers, where each provider can share their own information.

3. Benefits accrue from Share?

Awareness of what other providers are going to issue , filling knowledge gaps, Cross-verification of their own forecast

Outline

- I. Is it necessary for better communication among SWx providers, especially about ESW?
- II. Where shall we start from? And what shall we benefit from it? What resources are needed for communication?
- III. **Is there a standardized ESW description/scale/impact characterization? And should we have one?**

Criteria of ESW

I. There is no standardized criteria of ESW.

NOAA/SWPC

Category		Physical measure
Scale	Descriptor	
Flux level of ≥ 10 MeV particles (ions)		
S 5	Extreme	10^5
S 4	Severe	10^4
S 3	Strong	10^3
S 2	Moderate	10^2
S 1	Minor	10

CSSAR/SEPC

Category		Physical measure
Scale	Descriptor	
Flux level of ≥ 10 MeV particles (ions)		
Rank 1	Red	10^3
Rank 2	Orange	10^2
Rank 3	Yellow	10

II. We need a threshold of ESW to trigger the communication and coordination.

Thanks for your attention!