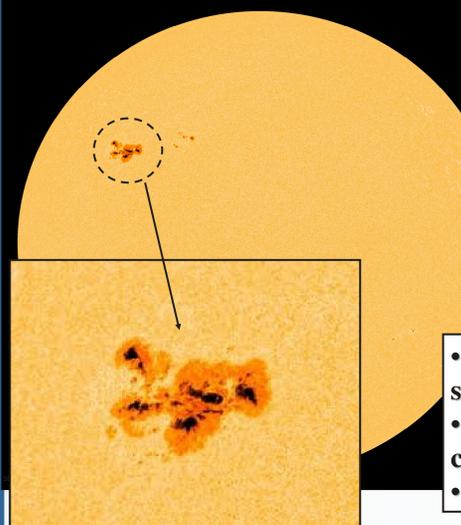


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## Introduction

- Solar cycle 24 is living up to predictions as a modest solar maxima. However there have been several active regions that have provided a range of space weather effects.
- The most prominent of these at the time of abstract submission (August 2012) was AR1429 in March 2012.
- The region was relatively large, peaking at 1270 millionths of the solar disc and magnetically complex at Macintosh Ekc with up to 28 spots. AR1429 produced two high M-class and 3 low X-class flares in early March when it was in the eastern hemisphere.
- Significant shortwave fadeouts resulted from at least one of the flares with a loss of HF radio bandwidth.
- Each major flare had an associated coronal mass ejection (CME) with some Earthward directed component and the potential for geoeffectiveness.
- However the CMEs did not perform as expected, with the 3rd not arriving at Earth, perhaps being overtaken by the 4th, and the 5th arriving substantially earlier than predicted.
- Geomagnetic Major Storm levels were achieved and significant ionospheric disturbances with large global reductions in F2 electron densities and HF radio frequencies.
- Two solar proton events, moderate and strong, also occurred with potential for spacecraft hazards.



## M/X class flares

- X1.1 - March 5 2012
  - X1.3 - March 6 2012
  - X5.4 - March 7 2012
  - M8.4 - March 9 2012
  - M7.9 - March 13 2012
- each with associated CME.

Each CME progressively more geoeffective as AR rotated westwards

- 1270 millionths of the solar disc
- Macintosh magnetic complexity class Ekc
- Up to 28 spots.

