

FUS 3 BOU 122200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO  
SDF NUMBER 132

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.  
ISSUED 2200Z 12 MAY 1983

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 11/2100  
TO 12/2100Z: ~~SOLAR ACTIVITY HAS BEEN MODERATE. REGION 4171~~  
(S31E01) PRODUCED AN IMPRESSIVE M5/3B FLARE AT 12/0256Z  
MAXIMUM. THIS FLARE WAS ACCOMPANIED BY IMPORTANCE 3 TYPE II/IV  
SWEEP FREQUENCY BURSTS ALONG WITH VARYING INTENSITY DISCRETE  
FREQUENCY BURSTS. 770 FLUX UNITS WERE RECORDED AT 2695MHZ WITH  
THIS FLARE, WHILE 170000 FLUX UNITS WERE REPORTED AT 245MHZ.  
THIS REGION CONTINUES TO SHOW SLOW DECAY IN BOTH WHITE LIGHT  
AND H-ALPHA, BUT RETAINS SOME FAIRLY STEEP MAGNETIC GRADIENTS  
ALONG WITH AN ACTIVE NEUTRAL LINE. REGION 4173 (S11W48) REMAINS  
THE MOST IMPRESSIVE DISK REGION WITH CONTINUED SLOW GROWTH AND  
A VERY COMPLEX INTERNAL STRUCTURE, BUT HAS ONLY MANAGED ONE  
SIGNIFICANT FLARE DURING THE PERIOD: AN M2/1B AT 1340Z MAXIMUM.  
THIS REGION'S MAGNETIC COMPLEXITY (SEVERAL DELTAS) WITH A VERY  
STRONG EAST-WEST GRADIENT INDICATE A VERY GOOD POTENTIAL FOR A  
LARGE PROTON FLARE. REGION 4175 (S09W40) HAS BEGUN TO MOVE  
WESTWARD INTO THE TRAILING PORTION OF REGION 4173 AND MAY LOSE  
ITS IDENTITY BY TOMORROW. NEW REGION 4176 (S08E23) DEVELOPED ON  
THE DISK TODAY AS A SIMPLE B-TYPE GROUP. REGIONS 4172 (S10W00)  
AND 4174 (N09E67) HAVE ALSO PRODUCED THEIR SHARE OF MINOR  
FLARES, BUT NEITHER HAVE SHOWN ANY SIGNIFICANT DEVELOPMENT  
TRENDS.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO  
INCREASE TO THE HIGH LEVEL WITH A HIGH PROBABILITY OF AN  
X-CLASS EVENT FROM REGION 4173 DURING THE NEXT 24 HOURS.  
MODERATE SIZED EVENTS ARE POSSIBLE FROM REGIONS 4171 AND 4174.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 11/2100Z TO 12/2100Z:  
THE GEOMAGNETIC FIELD HAS BEEN AT MINOR STORM LEVELS (MAJOR  
STORM LEVELS FOR HIGH LATITUDE SITES).

IIB. GEOPHYSICAL ACTIVITY FORECAST: THE FIELD SHOULD CONTINUE  
AT OCCASIONAL STORM LEVELS THROUGH THE NEXT 24 HOURS WITH A  
GRADUAL TREND TOWARDS QUIETER LEVELS BY THE END OF THE ZULU DAY  
TOMORROW. ACTIVITY IS THEN EXPECTED TO INCREASE AGAIN ON THE  
14TH IN RESPONSE TO TODAY'S EVENT LEVEL FLARES, AND REMAIN  
ACTIVE FOR THE DURATION OF THE PERIOD.

III. EVENT PROBABILITIES 13 MAY-15 MAY

CLASS M	90/90/90
CLASS X	50/30/30
PROTON	30/20/20
PCAF	YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED	12 MAY	159
PREDICTED	13 MAY-15 MAY	160/163/163
90 DAY MEAN	12 MAY	119

V. GEOMAGNETIC A INDICES

OBSERVED	AFR/AP	11 MAY	040/050
ESTIMATED	AFR/AP	12 MAY	035/050
PREDICTED	AFR/AP	13 MAY-15 MAY	025/030-020/025-030/025

SOLTERWARN

BT

White  
Sands