

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

White
Sand

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 ACCCOMPANIED 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 REGIONS 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 TODAYS 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

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