

FUS 3 BOU 112200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 131

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 11 MAY 1983

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 10/2100 TO 11/2100Z: SOLAR ACTIVITY HAS BEEN MODERATE DURING THE PAST 24 HOURS. FOUR M-CLASS XRAY EVENTS HAVE BEEN OBSERVED, THE LARGEST AT 11/0343Z BEING PRODUCED BY REGION 4173 (S11W34), WHILE ONE OF THE OTHERS (AT 1421Z MAXIMUM) WAS FROM REGION 4171 (S30E13). THE THIRD EVENT, AN M2 AT 0008Z, WAS NOT CORRELATED OPTICALLY AND THE FOURTH AT 1331Z WAS AGAIN FROM REGION 4173. THIS REGION IS NOW THE MOST IMPRESSIVE OF SEVERAL LARGE DISK REGIONS WITH REPORTS OF ENORMOUS GROWTH OVERNIGHT AND A VERY INTENSE MAGNETIC GRADIENT. ITS AVERAGE SPOT AREA HAS INCREASED FROM 410 MILLIONTHS YESTERDAY TO 1360 MILLIONTHS TODAY. IT IS NOW A BETA-GAMMA DELTA MAGNETIC CONFIGURATION WITH THE DELTA LOCATED IN THE SOUTH-CENTRAL PORTION OF THE REGION. BY CONTRAST, REGION 4171 APPEARS TO BE DECAYING SLOWLY AND MAY NOW BE LOSING ITS DELTA, ALTHOUGH THE MAGNETIC GRADIENTS IN ITS CENTRAL PORTION REMAIN STRONG. TWO NEW REGIONS WERE NUMBERED TODAY, REGION 4174 (N09E78) HAS ROTATED OVER EAST LIMB AS A SMALL C-TYPE GROUP, AND REGION 4175 (S08W26) IS A SMALL C-TYPE GROUP JUST BEHIND REGION 4173.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY SHOULD CONTINUE MODERATE FOR THE DURATION OF THE FORECAST PERIOD, WITH THE LIKELY CHANCE OF AN X-CLASS FLARE FROM REGION 4173 DURING THE NEXT 24 HOURS.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 10/2100Z TO 11/2100Z: THE GEOMAGNETIC FIELD WAS UNSETTLED UNTIL APPROXIMATELY 0600Z WHEN MINOR STORM CONDITIONS WERE RECORDED AT MID-LATITUDE SITES. DURING THIS SAME TIME PERIOD HIGH-LATITUDE SITES REPORTED MAJOR STORM LEVELS.

IIB. GEOPHYSICAL ACTIVITY FORECAST: THE GEOMAGNETIC FIELD IS EXPECTED TO REMAIN AT ACTIVE TO MINOR STORM LEVELS (OCCASIONAL MAJOR STORM LEVELS AT HIGH-LATITUDES) FOR THE NEXT THREE DAYS. A GRADUAL TREND TOWARDS UNSETTLED LEVELS SHOULD BE SEEN BY THE END OF THE PERIOD.

III. EVENT PROBABILITIES 12 MAY-14 MAY

CLASS M 85/85/85

CLASS X 30/30/30

PROTON 20/30/30

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 11 MAY 165

PREDICTED 12 MAY-14 MAY 163/166/162

90 DAY MEAN 11 MAY 119

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 10 MAY 008/009

ESTIMATED AFR/AP 11 MAY 036/055

PREDICTED AFR/AP 12 MAY-14 MAY 030/040-025/020-020/015

SOLTERWARN

BT