

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 078

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.
ISSUED 2200Z 19 MAR 1989

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 18/2100Z TO 19/2100Z: SOLAR ACTIVITY WAS MODERATE. REGION 5395 (N34W90) PRODUCED 2 M-LEVEL XRAY FLARES AS IT CONTINUES TO ROTATE OVER THE WEST LIMB. THIS REGION HAS EXHIBITED FREQUENT BRIGHT SURGES AND SPRAYS. SURGING AND LOOPS HAVE ALSO BEEN OBSERVED ON THE SOUTHEAST LIMB AT APPROXIMATELY S25. A 10.7 CM RADIO BURST OCCURRED AT 19/1842Z IN CONJUNCTIN WITH A LONG DURATION, OPTICALLY UNCORRELATED, M-LEVEL FLARE.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH. REGION 5395 STILL POSES A THREAT FOR FURTHER M AND X-LEVEL FLARES. THE ACTIVE AREA CURRENTLY BEHIND THE SOUTHEAST LIMB ALSO HAS EXHIBITED THE POTENTIAL TO INCREASE THE ACTIVITY LEVELS.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 18/2100Z TO 19/2100Z: THE GEOMAGNETIC FIELD HAS BEEN AT ACTIVE TO MINOR STORM LEVELS AT MIDDLE LATITUDES AND MINOR TO MAJOR STORM CONDITIONS AT HIGH LATITUDES. THIS DISTURBANCE BEGAN AS A SUDDEN COMMENCEMENT AT 19/0424Z AS RECORDED AT MIDDLE LATITUDE STATIONS (40 GAMMA SUDDEN IMPULSE). STORM CONDITIONS FOLLOWED THE SUDDEN IMPULSE. THE PROTON EVENT WHICH BEGAN ON 17/1855Z IS STILL IN PROGRESS. THE POLAR CAP ABSORPTION ALSO CONTINUES.

IIB. GEOPHYSICAL ACTIVITY FORECAST: THE GEOMAGNETIC FIELD IS EXPECTED TO BE ACTIVE TO MINOR STORM CONDITIONS FOR THE NEXT 24 HOURS. THIS DISTURBANCE SHOULD DECREASE TO UNSETTLED TO ACTIVE LEVELS ON 21-22 MARCH.

III. EVENT PROBABILITIES 20 MAR-22 MAR

CLASS M 99/75/75

CLASS X 50/40/25

PROTON 50/40/25

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 19 MAR 230

PREDICTED 20 MAR-22 MAR 220/215/210

90 DAY MEAN 19 MAR 228

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 18 MAR 013/018

ESTIMATED AFR/AP 19 MAR 033/045

PREDICTED AFR/AP 20 MAR-22 MAR 025/065-015/030-015/035