

HFUS 3 BOU 212200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 052

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 21 FEB 1984

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 20/2100 TO 21/2100Z: SOLAR ACTIVITY HAS BEEN AT A MODERATE LEVEL DURING THE PAST 24 HOUR PERIOD. A M1 X-RAY EVENT AT 21/1048Z WAS NOT OPTICALLY CORRELATED BUT LATER OBSERVATIONS INDICATED REGION 4421 (N15E23) WAS THE PROBABLY THE ORIGIN. IT DECREASED ITS WHITE LIGHT AREA, BUT RETAINED ITS 39 SPOTS AND FKI CLASSIFICATION. THE MAGNETIC CONFIGURATION REMAINED BETA-DELTA, BUT THE MAGNETIC GRADIENT WITHIN THE GROUP INCREASED SLIGHTLY. REGION 4421 PRODUCED SEVERAL OTHER LOW LEVEL C X-RAYS WITH SUB-FLARES SPACED THROUGHOUT THE PERIOD. REGION 4422 (N10E48) GREW 50 PER CENT IN AREA BUT PRODUCED NO SIGNIFICANT EVENTS. IT RETAINED ITS BETA-DELTA MAGNETIC CLASSIFICATION. NO NEW REGIONS WERE ASSIGNED.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE AT A MODERATE LEVEL THROUGHOUT THE FORECAST PERIOD. REGION 4421 (AND PERHAPS 4422 LATER) SHOULD MAINTAIN THE SLIGHT CHANCE OF HIGH LEVEL ACTIVITY. RETURNING REGION 4406 (S13, L-48 ON 7 FEB) APPARENTLY WILL ALSO CONTRIBUTE TO THE OVER-ALL HIGHER PLATEAU OF ACTIVITY, AND 10 CM FLUX WHICH SHOULD PEAK OUT ON THE FOURTH DAY (25 FEB).

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 20/2100Z TO 21/2100Z: GEOMAGNETIC ACTIVITY HAS BEEN AT AN ACTIVE LEVEL THROUGHOUT THE PAST 24 HOUR PERIOD. THULE REPORTED STORM LEVELS BEFORE 21/0300Z AND AFTER 21/1200Z. THE 10MEV PROTON EVENT IS STILL IN-PROGRESS WITH AN APPARENT PEAK OF 55 P/CM²/SEC/STER AT 21/1415Z. THIS STRONGLY BEARS THE CHARACTERISTIC OF THE EXTREME EAST LIMB POSITION EVENT AT 17/2301Z. THIS GRADUAL INCREASE OVER A 2 TO 3 DAY PERIOD (FIRST BREAKING THE GREATER THAN 10 P/CM² SEC/STER THRESHOLD AT 19/1310Z) CONFIRMS THAT THE EVENT LOCATION WAS AT N16E88 AS ASCRIBED.

IIB. GEOPHYSICAL ACTIVITY FORECAST: GEOMAGNETIC ACTIVITY IS EXPECTED TO BE AT AN ACTIVE LEVEL THROUGHOUT THE FORECAST PERIOD. STORM LEVELS ARE EXPECTED AT MID- AND HIGH-LATITUDES DURING NIGHT-TIME PERIODS. THIS IS ATTRIBUTED TO THE COMBINATION OF ACTIVE RECURRENT CARRINGTON LONGITUDES WITH SOLAR SECTOR BOUNDARIES; AND THE DELAYED GEOMAGNETIC EFFECT OF THE LARGE X2/2B EVENT AT 17/2301Z. THE ACTIVITY SHOULD PEAK OUT ON THE FOURTH DAY (25 FEB). THE 10MEV PROTON EVENT SHOULD NOT FALL BELOW THE 10 P/CM²/SEC/STER THRESHOLD UNTIL 23/1800Z.

III. EVENT PROBABILITIES 22 FEB-24 FEB

CLASS M 90/90/90

CLASS X 20/20/20

PROTON 05/10/15

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 21 FEB 147

PREDICTED 22 FEB-24 FEB 160/170/175

90 DAY MEAN 21 FEB 110

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 20 FEB 011/014

ESTIMATED AFR/AP 21 FEB 014/015

PREDICTED AFR/AP 22 FEB-24 FEB 020/020-020/020-025/025

SOLTERWARN

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