

HFUS3 BOU 162200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 351

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 16 DEC 1984

I. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 15/2100 TO 16/2100Z: SOLAR ACTIVITY WAS VERY LOW. REGION 4608 (N18E03) PRODUCED A CORRELATED B5/F EVENT WITH VERY MINOR RADIO BURSTS AT 15/0714Z. AN EARLIER B1/F EVENT OCCURRED AT 15/2115Z WITHOUT ANY SIGNIFICANT RADIO ASSOCIATED ACTIVITY. THE REGION CONTINUED TO SLOWLY DEVELOP IN WHITE-LIGHT WITH AN AREA OF 80 MILLIONTHS AND A CLASSIFICATION OF DSO. IN H-ALPHA, BOTH THE DARK AND ARCHED FILAMENTS CONTINUED INTERMITTENTLY WITH OCCASIONAL BRIGHT POINTS. IT REMAINED A BETA-TYPE MAGNETICALLY. REGION 4607 (S11W71) CONTINUED ITS VERY SLOW DECAY WITH LITTLE ACTIVITY. IT ALSO REMAINED A MAGNETIC BETA-TYPE. THE 10.7 CM (2800 MHZ) EAST-WEST SCAN DEPICTED AN ENHANCED FLUX REGION AT THE EAST LIMB, BUT NO OPTICAL ACTIVITY WAS REPORTED. NO NEW REGION WAS ASSIGNED.

IIB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE VERY LOW. REGION 4608 SLOWED ITS GROWTH AND DEVELOPMENT DURING THE PERIOD AND CONSEQUENTLY ISN'T EXPECTED TO PRODUCE SIGNIFICANT ACTIVITY ABOVE THE C-LEVEL X-RAY CATEGORY.

RETURNING REGION 4598 (S12, CAR-056) IS EXPECTED TO PROVIDE A VERY SLIGHT CHANCE OF MODERATE LEVELS (M-LEVEL X-RAYS) AND THE ENHANCED EAST LIMB FLUX (10.7 CM) SUPPORTS SOME EVENT ACTIVITY STILL CONTINUING AFTER ITS PASSAGE AROUND THE BACK-SIDE. IT IS PREDICTED TO APPEAR AT 17/0300Z. REGION 4600 (S12, CAR-041) IS PREDICTED TO RETURN AT 18/0600Z. IT CROSSED THE WEST LIMB AS A FAINT PLAGE REGION WITHOUT SPOTS AND IS NOT EXPECTED TO PRODUCE SIGNIFICANT ACTIVITY WHEN ITS LOCATION REAPPEARS.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 15/2100Z TO 16/2100Z: GEOMAGNETIC ACTIVITY WAS AT MINOR STORM TO ACTIVE LEVELS. THE ICE SATELLITE DETECTED THE SIGNATURE OF A HIGH-SPEED CORONAL HOLE STREAM. THIS DISTURBANCE WAS ATTRIBUTED TO THE POSITIVE CORONAL HOLE THAT WAS LAST DETECTED ON 9 DEC WITH THE CENTROID-EQUATOR POINT AT E22 (CAR-223). THE TRAILING EDGE-EQUATOR POINT WAS AT E32 (CAR-213), AND THAT LONGITUDE PASSED CENTRAL MERIDIAN AT 12/0200Z. THIS SUBSEQUENT DISTURBANCE WAS THE HIGH-SPEED STREAM'S TRAILING ZONE NEAR THE SOLAR SECTOR BOUNDARY IMPACTING THE MAGNETOSPHERE. MAJOR STORM LEVELS WERE REPORTED AT HIGH LATITUDES AT 15/2400, AND 16/1630-2100Z. MINOR STORM LEVELS STARTED THE PERIOD AND CONTINUED AT 16/0600-0900Z WITH A LATER INTERVAL AFTER 1500Z. THE MID LATITUDES DETECTED MINOR STORM LEVELS AT THE START OF THE PERIOD FROM 15/2100-2400Z. ACTIVE LEVELS DOMINATED THE 16/0130-2100Z TIME INTERVAL.

IIB. GEOPHYSICAL ACTIVITY FORECAST: GEOMAGNETIC ACTIVITY IS EXPECTED TO BE MINOR STORM TO ACTIVE LEVELS FOR ONE DAY. OCCASIONAL MAJOR STORM LEVELS ARE EXPECTED AT HIGH LATITUDES THE FIRST DAY (17 DEC). THE DISTURBANCE IS THEN EXPECTED TO DECREASE TO A PREDOMINATELY UNSETTLED TO ACTIVE LEVEL THROUGHOUT THE LAST TWO DAYS (18-19 DEC). QUIET TO UNSETTLED CONDITIONS ARE EXPECTED FOR THE OUTLOOK PERIOD (20-23 DEC).

III. EVENT PROBABILITIES 17 DEC-19 DEC

CLASS M 01/02/03

CLASS X 01/01/01

PROTON 01/01/01

PCAF GREEN

IV. OTTAWA 10.7 CM FLUX

OBSERVED 16 DEC 077

PREDICTED 17 DEC-19 DEC 078/079/080

30 DAY MEAN 16 DEC 075

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 15 DEC 021/021

ESTIMATED AFR/AP 16 DEC 022/030

PREDICTED AFR/AP 17 DEC-19 DEC 018/025-014/020-012/015

SOLTERWARN

BT