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HFUS 1 BOU 191303

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 353A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 1300Z 19 DEC 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 18/1200Z TO 19/1200Z: SOLAR ACTIVITY HAS CONTINUED HIGH THIS PERIOD WITH AN X1/2E FROM REGION 4026 (S12W33) AT 18/1501UT. STRONG SHORT WAVE FADE THRU 15MHZ ALONG WITH 240 FLUX UNITS AT 2695MHZ ACCCOMPANIED THIS EVENT. AT 19/0903UT REGION 4026 PRODUCED THE NEXT LARGEST EVENT OF THE PAST 24 HOURS A C9/1N, ONLY MINOR RADIO WAS OBSERVED. REGIONS 4026, 4022 (N09W71) AND 4025 (S07W44) HAVE ALL SHOWN MINOR AREA DECAY HOWEVER REGIONS 4022 AND 4025 MAINTAIN THEIR DELTA MAGNETIC CONFIGURATIONS WHILE REGION 4026 APPARENTLY HAS LOST THE DELTA BUT IT IS STILL A BETA-GAMMA. REGION 4031 (S17E51) CONTINUES TO GROW SLOWLY AND CONTAINS AN ARCH FILAMENT SYSTEM.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO CONTINUE AT A HIGH LEVEL DURING THIS PERIOD. REGIONS 4025 AND 4026 CONTINUE TO APPARENTLY HAVE THE POTENTIAL FOR CONTINUED X CLASS EVENTS.

OLD REGION 4007 (S15L285), WHICH PRODUCED AN X2 EVENT ON 07 DFC, IS DUE TO RETURN ON 21 DEC THIS REGION WAS GROWING AS IT TRANSITED THE WEST LIMB AND MAY RETURN AS A LARGE ACTIVE REGION.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN AT MINOR STORM LEVELS DURING THE PAST 24 HOURS. A SHORT PERIOD OF MAJOR STORM CONDITIONS WAS OBSERVED 19/0730 TO 0900UT AT MID LATITUDE SITES. DUE TO THE CONTINUED LARGE FLARES, DURING THE PAST 4 DAYS, THE GEOMAGNETIC FIELD IS EXPECTED TO FLUCTUATE BETWEEN MINOR AND MAJOR STORM LEVELS DURING THIS FORECAST PERIOD.

PROTONS AT 1200UT WERE RECORDED AT 14 P/CM<sup>2</sup>/SEC/STER AT GREATER THAN 12MEV.

III. EVENT PROBABILITIES 20 DEC-22 DEC

CLASS M 90/90/90

CLASS X 40/20/15

PROTON 40/40/15

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 18 DEC 193

ESTIMATED 19 DEC 179

PREDICTED 20 DEC-22 DEC 168/164/160

90 DAY MEAN 18 DEC 178

V. GEOMAGNETIC A INDICES

OBSERVED AFR 17 DEC 041 AP 18 DEC 039

ESTIMATED AFR 18 DEC 035 AFR/AP 19 DEC 035/045

PREDICTED AFR/AP 20 DEC-22 DEC 040/040-040/030-030/025

SOLTERWARN

BT

HFUS 3 BOU 192200  
FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO  
SDF NUMBER 353B  
JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.  
ISSUED 2200Z 19 DEC 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 19/1200Z TO 19/2100Z: SOLAR ACTIVITY HAS BEEN MODERATE THIS PERIOD. THE LARGEST FLARE WAS A 2B/M9 FROM REGION 4022 (N10W78) WITH XRAY MAXIMUM TIME OF 1630Z. THIS FLARE WAS ACCCOMPANIED BY WEAK TO MODERATE DISCRETE RADIO BURSTS AND A SHORT WAVE FADE TO 15 MHZ. THE ONLY OTHER FLARES THIS PERIOD WERE OPTICALLY SUB FAINTS FROM REGION 4023 (S12W43). MAGNETICALLY REGION 4022 IS A BETA-DELTA, 4026 IS A BETA-GAMMA AND 4025 (S07W51) IS A BETA-GAMMA-DELTA. REGION 4031 (S17E46) REMAINS A SIMPLE BETA GROUP BUT IT HAS GROWN SIGNIFICANTLY IN WHITE LIGHT SINCE YESTERDAY.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO REMAIN MODERATE. REGIONS 4025, AND 4026 STILL HAVE THE POTENTIAL FOR ISOLATED X CLASS EVENTS DURING THE EARLY PART OF THE FORECAST PERIOD, HOWEVER.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD STARTED THE PERIOD AT MINOR STORM LEVELS, BUT HAS SINCE DECREASED TO ACTIVE CONDITIONS. THE FIELD IS EXPECTED TO FLUCTUATE BETWEEN THESE TWO LEVELS FOR THE FIRST DAY OF THE FORECAST AND THEN TO REMAIN AT ACTIVE LEVELS FOR THE REMAINDER OF THE FORECAST. A PROTON EVENT ENDED AT 1405Z DURING THIS PERIOD, BUT AT 1920Z PROTONS AT GEOSYNCHRONOUS ALTITUDES AGAIN WENT THROUGH THE EVENT THRESHOLD OF 10 / CM2-SEC-STER AT GREATER THAN 10 MEV. THIS WAS THE RESULT OF PROTONS FROM THE M9 FLARE ADDING TO THE ALREADY HIGH BACKGROUND LEVEL.

III. EVENT PROBABILITIES 22 DEC-22 DEC

CLASS M 90/90/90  
CLASS X 30/20/15  
PROTON 40/40/15  
PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 19 DEC 179  
PREDICTED 22 DEC-22 DEC 168/164/160

90 DAY MEAN 19 DEC 173

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 18 DEC 035/039

PREDICTED AFR/AP 19 DEC 028/028

PREDICTED AFR/AP 22 DEC-22 DEC 025/032-025/025-025/025

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