

HFUS 1 BOU 181300

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 352A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 1300Z 18 DEC 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 17/1200Z TO 18/1200Z: SOLAR ACTIVITY HAS BEEN VERY HIGH. A CLASS X10/3B FLARE OCCURRED AT 1521Z IN REGION 4025(S06W32) WHERE AN EXCEPTIONAL DELTA CONFIGURATION PERSISTS. THE FLARE WAS VISIBLE IN WHITE LIGHT AND PRODUCED TYPE II AND 1900 FU 10CM BURSTS AND STRONG SHORTWAVE FADE THROUGH 15 MHZ. THE SPOT SIZE AND OVERALL APPEARANCE OF THE CHROMOSPHERE DO NOT SUGGEST SUCH EXTREME ACTIVITY FOR THIS REGION. REGION 4026(S13W20) PRODUCED M1/SB AT 1637Z, M4/2B AT 2104Z, M4/2B AT 2153Z AND X1/1B AT 0818Z. RADIO BURSTS WERE MINOR WITH ALL THESE EVENTS. AN M1/SN FLARE OCCURRED AT 0941Z IN REGION 4022(N10W53). DELTA CONFIGURATIONS CONTINUE IN 4022 AND 4023. REGION 4021(S16W75) PRODUCED A M5/1P FLARE AT 2245Z. THE EASTERN HALF OF THE SUN IS VOID OF SIGNIFICANT FEATURES OTHER THAN CORONAL HOLES.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO CONTINUE HIGH. WEST LIMB PASSAGE OF REGION 4021 AND 4022 WILL CAUSE SOLAR INDICES TO DROP SHARPLY.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE MAJOR GEOMAGNETIC STORM WHICH BEGAN NEAR 0735Z YESTERDAY DECLINED TO MINOR LEVELS BY 1500Z. ANOTHER PERIOD OF MAJOR ACTIVITY BEGAN TODAY AT 0900Z. ACTIVITY AGAIN RETURNED TO MINOR STORM LEVELS BY 1200Z. ANOTHER PERIOD OF MAJOR ACTIVITY IS EXPECTED EARLY ON 19 DECEMBER. THE FLUX OF 10 MEV PROTONS EXCEEDED EVENT THRESHOLD OF 10 P/CM²/SEC AT 1945Z. PEAK FLUX OF 96 CTS/S WAS REACHED AT 0245Z. A GREATER PEAK OF 130 CTS/S WAS RECORDED DURING THE INTENSE SUBSTORM AT 0945Z. THE COUNT HAD DECREASED TO 60 BY 1200Z. ADDITIONAL PARTICLE FLUX IS EXPECTED FROM FLARES IN THE NEXT THREE DAYS.

III. EVENT PROBABILITIES 19 DEC-21 DEC

CLASS M 90/90/90

CLASS X 60/40/20

PROTON 70/40/40

PCAF IN PROGRESS

IV. OTTAWA 10.7 CM FLUX

OBSERVED 17 DEC 202

ESTIMATED 18 DEC 190

PREDICTED 19 DEC-21 DEC 177/168/164

90 DAY MEAN 17 DEC 177

V. GEOMAGNETIC A INDICES

OBSERVED AFR 16 DEC 011 AP 17 DEC 058

ESTIMATED AFR 17 DEC 039 AFR/AP 18 DEC 036/030

PREDICTED AFR/AP 19 DEC-21 DEC 052/035-040/040-040/020

SOLTERWARN

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HFUS 3 BOU 182200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 352B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 18 DEC 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 18/1200Z TO 18/2100Z: SOLAR ACTIVITY HAS REMAINED VERY HIGH. AFTER THE X1/1B AT 2318Z FROM REGION 4026 (S13W26), IT AGAIN PRODUCED AN X1/2B AT 1521Z. DISCRETE RADIO BURSTS WERE MODERATE WITH 240 FU OCCURRING AT 2695 MHZ. STRONG SHORT WAVE FADES OCCURRED THROUGH 15 MHZ. REGIONS 4026, 4025, (S06W38), AND 4022 (N10W63) ALL RETAIN THEIR DELTA CONFIGURATIONS; STRUCTURAL CHANGES CONTINUE IN ALL THREE REGIONS. CURRENTLY, REGION 4026 HAS THE STEEPEST MAGNETIC GRADIENTS. REGION 4231 (S16E63) IS EMERGING RAPIDLY TODAY.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO REMAIN HIGH.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN AT MINOR TO MAJOR STORM LEVEL. THESE CONDITIONS ARE EXPECTED TO CONTINUE THROUGH THE FORECAST PERIOD WITH THE NEXT PERIOD OF MAJOR STORM ACTIVITY EXPECTED EARLY ON 19 DECEMBER. THE SATELLITE PROTON EVENT CONTINUES TO DECLINE WITH A FLUX VALUE NEAR 25 AT 2100Z. THE CALCULATED PCA BEGAN 18/0300Z, REACHED MAXIMUM ABSORPTION OF 3.7 DB AT 18/1000Z, AND REMAINS IN PROGRESS.

III. EVENT PROBABILITIES 19 DEC-21 DEC

CLASS M 90/90/90

CLASS X 60/40/20

PROTON 70/40/40

PCAF IN PROGRESS

IV. OTTAWA 10.7 CM FLUX

OBSERVED 18 DEC 193

PREDICTED 19 DEC-21 DEC 177/168/164

90 DAY MEAN 18 DEC 178

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 17 DEC 741/058

ESTIMATED AFR/AP 18 DEC 035/040

PREDICTED AFR/AP 19 DEC-21 DEC 050/045-040/042-040/030

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