

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 1821Z 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 4026. 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 193  
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 050/035-040/040-040/020  
SOLTERWARN  
BT

HFUS 3 BOU 182200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 3528

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 0818Z FROM REGION 4026 (S13W26), IT AGAIN PRODUCED AN X1/2B AT 1501Z. DISCRETE RADIO BURSTS WERE MODERATE WITH 240 FU OCCURRING AT 2695 MHZ. STRONG SHORT WAVE FADES OCCURRED THROUGH 15 MHZ. REGIONS 4026, 4025, (S08W38), 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 (S16E60) 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 241/058

ESTIMATED AFR/AP 18 DEC 035/040

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

SOLTERWARN

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