

END OF BULLETIN  
HFUS 1 BOU 121300  
FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO  
SDF NUMBER 315A  
JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.  
ISSUED 1300Z 12 NOV 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 11/1200Z TO 12/1200Z: SOLAR ACTIVITY HAS BEEN MODERATE. UNASSOCIATED XRAY EVENTS OCCURRED AT 12/0118Z AND 12/0955Z MAXIMA, M2 AND M1 EVENTS RESPECTIVELY. REGION 3451(N18W14) PRODUCED A C9/1B FLARE AT 0343Z MAXIMUM ACCCOMPANIED BY RADIO EMISSION AT ALL DISCRETE FREQUENCIES INCLUDING 3400 FLUX UNITS AT 245 MHZ AND 1300 AT 1415 MHZ. THIS REGION IS THE APPARENT PERSISTENT SOURCE OF DISCRETE FREQUENCY EMISSION THROUGHOUT THE EARLY HOURS OF THE DAY. THE M1 EVENT MENTIONED ABOVE ACHIEVED MAXIMUM OVER A PERIOD OF NEARLY ONE AND ONE HALF HOURS, AND XRAY LEVELS HAVE REMAINED NEAR M CLASS SINCE THAT TIME. THE PROBABLE SOURCE OF THIS M CLASS ACTIVITY IS REGION 3432, NOW BEHIND THE WEST LIMB. THE REPORTS CONCERNING REGION 3451 INDICATE A VERY DYNAMIC REGION WITH MAGNETIC COMPLEXITY, A DELTA AND STEEP GRADIENTS. REGION 3450(S19W24) HAS ALSO BECOME MORE COMPLEX GAINING A DELTA AND SLEEPER GRADIENTS.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY MAY BE EXPECTED TO INCREASE, POSSIBLY TO HIGH LEVELS DUE TO THE POTENTIAL NOW APPEARING IN REGIONS 3451 AND 3450. BOTH REGIONS ARE FAVORABLY POSITIONED TO DELIVER ENERGETIC PARTICLES IN CASE MAJOR FLARES SHOULD OCCUR.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN ACTIVE WITH PERIODS OF MINOR STORM LEVELS SINCE THE STORM SUDDEN COMMENCEMENT AT 11/1238Z. THE LIKELY SOURCE OF THIS ACTIVITY, AN M3/1B FLARE FROM REGION 3450 ACCCOMPANIED BY TYPE IV EMISSION OCCURRING 9 NOV. THE MAGNETIC FIELD IS EXPECTED TO REMAIN ACTIVE INTO THE DAY 13 NOV. UNSETTLED TO NEAR ACTIVE CONDITIONS SHOULD FOLLOW FOR THE REMAINDER OF THE FORECAST PERIOD.

III. EVENT PROBABILITIES 13 NOV-15 NOV

CLASS M 90/90/90

CLASS X 30/30/30

PROTON 30/30/30

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 11 NOV 221

ESTIMATED 12 NOV 220

PREDICTED 13 NOV-15 NOV 220/213/215

90 DAY MEAN 11 NOV 229

V. GEOMAGNETIC A INDICES

OBSERVED AFR 10 NOV 015 AP 11 NOV 030

ESTIMATED AFR 11 NOV 028 AFR/AP 12 NOV 029/033

PREDICTED AFR/AP 13 NOV-15 NOV 014/014-012/014-010/010

SOLTERWARN

BT

HFUS BOU 121300  
PREDM 09013 09014 09015  
PREDX 03013 03014 03015  
PREDP 03013 03014 03015  
PCAFT 00213  
TENCM 22013 21314 21515  
AFRED 01413 01214 01015  
AFAPF 01413 01414 01015  
KKK 44443 33213 33332  
BT

HFXUS 3 BOU 122200  
FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO  
SDF NUMBER 316B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 12 NOV 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 12/1200Z TO 12/2100Z: SOLAR ACTIVITY REACHED A HIGH LEVEL WITH AN IMPULSIVE X1/1B FLARE AT 1605UT FROM REGION 3451(N13W13), DURATION 40 MINUTES. IT HAD AN ASSOCIATED MODERATE RADIO BURST WITH NO TYPE II OR TYPE IV RADIO EMISSION REPORTED. THIS REGION CONTINUES TO INCREASE IN COMPLEXITY. THE SPOT GROUP CONTAINS AT LEAST TWO DELTA CONFIGURATIONS AND PROPER MOTION OF THE SPOTS IS APPARENT. THIS REGION ALSO PRODUCED THE FOLLOWING FLARES; C6/1B AT 1239UT, C4/SN AT 1415UT AND C8/1B AT 1925UT. REGION 3456(N17E24) PRODUCED AN M1/1B FLARE AT 1816UT WITH ASSOCIATED MODERATE RADIO BURSTS ON ALL FREQUENCIES. IT IS GROWING AND THE SPOT GROUP IS MORE COMPLEX THAN EARLIER TODAY. REGION 3450 (S19W28) PRODUCED ONLY A SMALL SUBFLARE AT 1625UT. SURGE ACTIVITY IS REPORTED AT N05 E LIMB. NEW REGION 3450 (N13W01) DEVELOPED ON THE DISK SINCE YESTERDAY.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO CONTINUE AT A MODERATE TO HIGH LEVEL AS ALL REGIONS CONTINUE TO DEVELOP. FURTHER MAJOR FLARES ARE LIKELY FROM REGION 3451 AND CLASS M EVENTS ARE POSSIBLE FROM REGION 3450 AND 3456.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN ACTIVE THE PAST 9 HOURS. UNSETTLED CONDITIONS ARE EXPECTED DURING THE FORECAST PERIOD WITH ACTIVE LEVELS POSSIBLE FROM FLARES AND GROWTH IN REGION 3451. A PROTON EVENT IS NOT EXPECTED FROM THE X1/1B FLARE BECAUSE OF THE SHORT DURATION AND LACK OF SIGNIFICANT RADIO EMISSION.

III. EVENT PROBABILITIES 13 NOV-15 NOV

CLASS M 90/90/90

CLASS X 30/30/30

PROTON 30/30/30

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 12 NOV 228

PREDICTED 13 NOV-15 NOV 226/224/213

90 DAY MEAN 12 NOV 230

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 11 NOV 030/030

ESTIMATED AFR/AP 12 NOV 030/040

PREDICTED AFR/AP 13 NOV-15 NOV 012/014-018/020-018/025

SOLTERWARN

BT

HFXUS BOU 122200

PREDM 09013 09014 09015

PREDX 03013 03014 03015

PREDP 03013 03014 03015

PCAFIT 00213

TENCM 22613 22414 21815

AFRAD 01213 01814 01815

AFAPF 01413 02014 02515

RT