

HFUS 1 BOU 121245

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 285 A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY
ISSUED 1300Z 12 OCTOBER 1981

I A. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM
11/1200Z TO 12/1200Z:

SOLAR ACTIVITY HAS BEEN HIGH DURING THE PAST 24 HOURS. A MAJOR FLARE, X3/3B, OCCURRED AT 0636 Z IN REGION 3390 (S18E27). THIS PARALLEL RIBBON FLARE WAS ACCCOMPANIED BY MASSIVE RADIO NOISE INCLUDING 11000 FU AT 2695 MHZ (10 CENTIMETERS), 20000 FU AT 245 MHZ AND OVER 17000 FU AT 15400 MHZ. A STRONG TYPE IV EMISSION WAS ALSO OBSERVED, AND SHORTWAVE FADE OUTS TO 22 MHZ WERE REPORTED. REGION 3390 FOLLOWED THIS DISPLAY WITH AN M9/1B FLARE MAXING AT 1101 Z. TWO OTHER M-CLASS X-RAY EVENTS WERE NOT OBSERVED OPTICALLY. THESE WERE AN M7 AT 0437 Z AND AN M1 AT 0517 Z. REGION 3397 (S21E19), A COMPANION TO 3390, HAS BEEN PRODUCING FLARES OF OPTICAL CLASS 1B. REGION 3388 (S10W56) HAS ALSO BEEN FLARING ALTHOUGH LESS VIGOROUSLY THAN YESTERDAY. THESE THREE REGIONS ARE ALL EXTREMELY MAGNETICALLY COMPLEX AND ARE CAPABLE OF ADDITIONAL SIGNIFICANT ACTIVITY.

I B. SOLAR ACTIVITY FORECAST:

SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH BASED ON THE FLARE POTENTIAL SHOWN BY REGIONS 3390, 3397, AND 3388.

I I. GEOPHYSICAL SUMMARY AND FORECAST:

THE GEOMAGNETIC FIELD HAS BEEN AT MINOR STORM LEVELS BUT IS PRESENTLY QUIETING DOWN TO UNSETTLED CONDITIONS. TODAY'S MAJOR FLARE IS EXPECTED TO RESULT IN A SUDDEN COMMENCEMENT LATE ON 13 OCTOBER FOLLOWED BY A MAJOR GEOMAGNETIC STORM ON OCT 14 AND 15. THE PROTON EVENT IN PROGRESS AT SATELLITE LEVELS HAS BEEN BOOSTED DRAMATICALLY BY THE X3/3B FLARE. THE NEW PARTICLES BEGAN ARRIVING BY 0715 Z AND REACHED 170 PROTONS/CM²/SEC/STER AT GREATER THAN 10 MEV ENERGIES BY 1000Z. THIS PROTON EVENT IS EXPECTED TO MAXIMIZE EARLY ON 13 OCTOBER.

III. EVENT PROBABILITIES: 13 - 15 OCT

CLASS M 90/90/90

CLASS X 40/40/40

PROTON 30/40/40

PCAF RED

IV. OTTAWA 10.7 FLUX

OBSERVED 11 OCT 221

ESTIMATED 12 OCT 220

PREDICTED 13-15 OCT 220/220/216

90 DAY MEAN 11 OCT 217

V. GEOMAGNETIC A INDICES

OBSERVED AFR 10 OCT 22 AP 11 OCT 39

ESTIMATED AFR 11 OCT 32 AFR/AP 12 OCT 15/25

PREDICTED AFR/AP 13-15 OCT 18/18 55/50 40/50

SOLTERWARN

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HFUS 3 BOU 122200
FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLORADO

SDF NUMBER 285B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200Z 12 OCTOBER 1981

I A. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 12/1200Z TO 12/2100Z : SOLAR ACTIVITY HAS BEEN MODERATE THIS PERIOD. REGION 3390 (S18E20) PRODUCED AN M1/2N AT 1711Z AND REGION 3403 (S11E79) HAD AN M3/SN AT 1446Z. A BRIGHT SURGE ON THE LIMB, FROM SE15 OUT TO .15 RADII, WAS OBSERVED FROM 1411Z TO 1508Z ALONG WITH A C7 X-RAY REPORT. REGION 3403 HAS PRODUCED SEVERAL C-CLASS EVENTS THIS PERIOD. REGION 3388 (S09W64) HAS EXHIBITED DECAY IN AREA AND MAGNETIC COMPLEXITY. REGIONS 3390 AND 3397 (S22E11) BOTH HAVE A DELTA CONFIGURATION.

I B. SOLAR ACTIVITY FORECAST : SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH AS BOTH REGIONS 3390 AND 3397 HAVE RETAINED THEIR COMPLEX FEATURES. REGION 3403 MAY CONTINUE TO BE A PRODUCER OF M-CLASS ACTIVITY AS IT ROTATES ONTO THE VISIBLE DISK.

II. GEOPHYSICAL SUMMARY AND FORECAST : THE GEOMAGNETIC FIELD HAS BEEN UNSETLED TO QUIET THIS PERIOD. THE X3/3B THAT OCCURRED 12/0637Z SHOULD CAUSE A SUDDEN COMMENCEMENT LATE ON 13 OCTOBER FOLLOWED BY A MAJOR GEOMAGNETIC STORM ON 14 OCTOBER. THE SATELLITE LEVEL PROTON EVENT CONTINUES IN PROGRESS AND IS AT 190 PROTONS/CM²/SEC/STER AT GREATER THAN 10 MEV ENERGIES AT 2100Z, THE EVENT IS EXPECTED TO MAXIMIZE EARLY ON 13 OCTOBER. A POLAR CAP ABSORPTION EVENT BEGAN 12/1445Z AND IS EXPECTED TO CONTINUE FOR 36 TO 48 HOURS.

III. EVENT PROBABILITIES 13 OCTOBER - 15 OCTOBER

CLASS M 90/90/90

CLASS X 40/40/40

PROTON 30/40/40

PCA IN PROGRESS

IV. OTTAWA 10.7 CM FLUX

OBSERVED 12 OCTOBER 234

PREDICTED 13-15 OCTOBER 240/245/248

90-DAY MEAN 12 OCTOBER 217

V. GEOMAGNETIC A, INDICES

OBSERVED AFR/AP 11 OCTOBER 29/39

ESTIMATED AFR/AP 12 OCTOBER 12/15

PREDICTED AFR/AP 13-15 OCTOBER 18/18 - 55/50 - 40/50

SOLTERWARN

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