

HFUS 1 BOU 021300

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 033A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 1300Z 02 FEB 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 01/1200Z TO 02/1200Z: SOLAR ACTIVITY HAS BEEN HIGH FOR THE PAST 24 HOURS. THE PRINCIPAL EVENT WAS AN X2/3B FLARE FROM REGION 3576(S12W13) WHICH MAXED AT 1409Z. THIS FLARE WAS CENTERED IN THE WESTERN PORTION OF 3576, AND IT TRIGGERED A CONCURRENT 1B FLARE IN THE TRAILER OR 3578 (S08W34). ASSOCIATED RADIO EVENTS INCLUDED 1200 FLUX UNITS AT 10 CM, A SIGNIFICANT TYPE II RADIO SWEEP, AND LATE REPORTS OF TYPE IV CONTINUUM. SHORT WAVE FADES WERE OBSERVED OUT TO 22 MHZ. REGION 3576 HAS APPARENTLY NOT RELAXED FOLLOWING THIS EVENT, AND MORE X-CLASS EVENTS ARE LIKELY. MEANWHILE, REGION 3573/3581 (NOW RENUMBERED AS SIMPLY 3573 (N12W19)) HAS CONTINUED TO DEVELOP AND IT NOW POSSESSES SIMILAR POTENTIAL FOR MAJOR ACTIVITY. IN ADDITION, 3579 (N09W02) AND 3583 (S16E19) EACH CONTAIN THE NECESSARY COMPLEXITY TO PRODUCE SIGNIFICANT (M-CLASS) FLARES. PERHAPS THE BEST SUMMARY OF THE EXTRAORDINARY LEVEL OF PRESENT ACTIVITY IS THAT 12 OF THE 16 SPOTTED REGIONS HAVE BEEN OBSERVED TO BE FLARE SITES DURING THIS REPORTING PERIOD.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH WITH A GOOD CHANCE FOR PROTON FLARES FROM EITHER REGION 3576 OR 3573.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN AT STORM LEVELS FOR THE PAST 24 HOURS. THIS DISTURBANCE, WHICH ORIGINATED WITH A PROTON FLARE ON 30 JAN, IS EXPECTED TO INTENSIFY WITH THE ARRIVAL OF NEW FLARE EJECTA FROM THE X2/3B FLARE OF 01 FEB. THE STORM SHOULD CONTINUE THROUGH 04 FEB, SUBSIDING THEREAFTER (ASSUMING NO NEW FLARES OCCUR). THE PROTON EVENT WHICH BEGAN ON 31 JAN CONTINUES IN PROGRESS AND HAS INCREASED SLIGHTLY IN THE LAST HOUR. AT 1200Z TODAY, SATELLITE PROTON FLUXES AT GREATER THAN 10 MEV ENERGIES STOOD AT 420 PARTICLES/CM<sup>2</sup>/SEC/STER. HOWEVER, THE ASSOCIATED POLAR CAP ABSORPTION EVENT ENDED NEAR 0400Z. EVEN IF NO ADDITIONAL MAJOR FLARES OCCUR, THE PROTON EVENT MAY NOT DROP BELOW THE EVENT THRESHOLD OF 10 FOR SEVERAL MORE DAYS.

III. EVENT PROBABILITIES 03 FEB-05 FEB

CLASS M 90/90/90

CLASS X 40/40/40

PROTON 30/30/30

PCAF RED

IV. OTTAWA 10.7 CM FLUX

OBSERVED 01 FEB 301

ESTIMATED 02 FEB 290

PREDICTED 03 FEB-05 FEB 285/280/280

90 DAY MEAN 01 FEB 198

V. GEOMAGNETIC A INDICES

OBSERVED AFR 31 JAN 024 AP 01 FEB 038

ESTIMATED AFR 01 FEB 035 AFR/AP 02 FEB 050/058

PREDICTED AFR/AP 03 FEB-05 FEB 070/050-035/030-020/020

SOLTERWARN

BT

HXUS BOU 021300

PREDM 09003 09004 09005

PREDX 04003 04004 04005

PREDP 03003 03004 03005

PCAFT 00303

TENCM 28503 28004 28005

AFRED 07003 03504 02005

AFAPF 05003 03004 02005

KKK 44566 44445 65543

BT

HFUS 3 BOU 022200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 033B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 02 FEB 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 02/1200Z TO 02/2100Z: SOLAR ACTIVITY HAS BEEN HIGH DURING THIS PERIOD. SLOW ONSET LONG DURATION XRAY ACTIVITY AT M3 MAXIMUM, 02/1451Z WAS OBSERVED COINCIDENT WITH BSL TO .15 AT SE10, FOLLOWED BY LOOPS AT SE10 BEHIND THE LIMB AND BSL TO .20 AT SE15. XRAY BACKGROUND HAS REMAINED ABOVE THE M CLASS LEVEL FOR MOST OF THE PERIOD. REGION 3577(S13W61) PRODUCED AN M3/2B WITH XRAY/OPTICAL MAXIMUM AT 02/1852Z. REGION 3576(S13W20) HAS BEEN ACTIVE AT SUBFLARE LEVELS RECURRENTLY WITH ITS XRAY OUTPUT BURIED IN THE HIGH BACKGROUND. REGION 3576 REMAINS MAGNETICALLY COMPLEX WITH TIGHT GRADIENTS AND DELTAS EVIDENT BOTH IN THE CENTRAL PART AND IN THE TRAILER.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY SHOULD REMAIN AT HIGH TO MODERATE LEVELS. SIGNIFICANT ACTIVITY IS LIKELY IN REGION 3576, AND POSSIBLE FROM REGIONS 3577, 3573(N10W29) AS WELL AS FROM REGIONS EXPECTED ON THE EAST LIMB.

II. GEOPHYSICAL SUMMARY AND FORECAST: GEOMAGNETIC ACTIVITY HAS DECREASED SLIGHTLY IN RECENT HOURS FROM MAJOR STORM LEVELS. ENERGETIC PARTICLES AT SATELLITE ALTITUDES HAVE DECREASED FROM 400 TO ABOUT 120 PARTICLES PER SECOND GREATER THAN 10 MEV. GEOMAGNETIC ACTIVITY IS EXPECTED TO RESUME AT MAJOR STORM LEVELS DUE TO THE X2/3B FLARE OF FEB 1. ENERGETIC PARTICLES ARE EXPECTED TO CONTINUE FOR MOST OF ANOTHER DAY.

III. EVENT PROBABILITIES 03 FEB-05 FEB

CLASS M 90/90/90

CLASS X 40/40/40

PROTON 30/30/30

PCAF RED

IV. OTTAWA 10.7 CM FLUX

OBSERVED 02 FEB 286

PREDICTED 03 FEB-05 FEB 280/280/280

90 DAY MEAN 02 FEB 198

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 01 FEB 036/038

ESTIMATED AFR/AP 02 FEB 055/058

PREDICTED AFR/AP 03 FEB-05 FEB 070/050-035/030-020/020

SOLTERWARN

BT

HXUS BOU 022200

PREDM 09003 09004 09005

PREDX 04003 04004 04005

PREDP 03003 03004 03005

PCAF 00303

TENCM 28003 28004 28005

AFRED 07003 03504 02005

AFAPF 05003 03004 02005

BT