

SDF NUMBER 034A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 1300Z 03 FEB 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 02/1200Z TO 03/1200Z: SOLAR ACTIVITY HAS BEEN HIGH FOR THE PAST 24 HOURS. THE LARGEST EVENT WAS AN X1/2B FLARE FROM 3576 (S13W29) WHICH MAXED AT 0128Z. THE EVENT WAS ACCCOMPANIED BY A RADIO BURST OF 1500 FLUX UNITS AT 10 CM, A MAJOR TYPE II SWEEP, AND TYPE IV RADIO CONTINUUM THAT LASTED 153 MINUTES. THE FLARE DEVELOPED GRADUALLY FROM AN ENHANCED AREA SOUTH WEST OF THE LARGE LEADER SPOT INTO A PARALLEL RIBBON STRUCTURE THAT EXTENDED TO INCLUDE THE TRAILER OF 3578 (S11W49). DISK LOOPS WERE OBSERVED FOLLOWING THE FLARE. REGION 3576 CONTINUES TO GROW ESPECIALLY IN ITS CENTRAL PORTION AND IT RETAINS ITS EXTREMELY COMPLEX MAGNETIC STRUCTURE. HOWEVER, 3576 MAY SOON HAVE TO COMPETE FOR ATTENTION WITH A NEW REGION WHICH HAS NOT YET ROTATED OVER THE EAST LIMB. A LONG DURATION M3 X-RAY EVENT MAXING AT 1451Z WAS ASSOCIATED WITH LOOPS AT SE10 AND A BSL TO .20 R AT SE15. THE SOUTHEAST LIMB HAS CONTINUED TO PROVIDE A SPECTACULAR SHOW WITH SEVERAL REPORTS OF LOOPS, SPRAYS TO .4 R, AND CORONAL RAIN. A BRIGHT AREA IS BEGINNING TO ADVANCE ONTO THE DISK BUT SPOTS ARE NOT YET VISIBLE. REGION 3573 (N10W37) HAS DECAYED SIGNIFICANTLY SINCE YESTERDAY AND IS NO LONGER EXPECTED TO PRODUCE MAJOR ACTIVITY. BESIDES 3576, THE OTHER MOST IMPORTANT REGIONS ON THE DISK ARE 3577 (S14W67) WHICH PRODUCED A PARALLEL-RIBBON M3/2B FLARE AT 1852Z, AND 3583 (S18E03) WHICH IS GROWING AND OF BETA-GAMMA MAGNETIC COMPLEXITY. NEW REGION 3592 (N16E08) HAS GROWN RAPIDLY EAST OF REGION 3582 (N15W07), AND REGION 3593 (S16E68) IS A SINGLE SPOT WHICH MAY BE THE RETURN OF OLD REGION 3544.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE HIGH WITH GOOD PROBABILITIES OF MAJOR ACTIVITY FROM 3576 AND THE NEW REGION BEHIND THE EAST LIMB.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD WAS AT STORM LEVELS AT THE BEGINNING OF THIS PERIOD BUT HAS QUIETED DOWN TO ACTIVE LEVELS. AN IMPULSE IN THE GEOMAGNETIC FIELD WAS RECORDED AT 0134Z. ISEE-3 DATA WAS NOT AVAILABLE BUT PIONEER VENUS OBSERVED AN INTERPLANETARY SHOCK AT 2224Z. THIS SHOCK IS PRESUMABLY FROM THE X2/3B FLARE OF 01 FEB. HOWEVER, THERE IS NOT YET ANY INDICATION OF THE GEOMAGNETIC STORM WHICH HAD BEEN FORECAST FROM THAT FLARE. TODAY'S X1/2B FLARE IS EXPECTED TO PRODUCE MINOR STORM CONDITIONS BEGINNING ON 04 FEB AND ENDING ON 06 FEB. THE SATELLITE PROTON EVENT CONTINUES IN PROGRESS. LEVELS HAVE DECLINED THROUGHOUT THE REPORTING PERIOD WITH NO ENHANCEMENT FROM THE X1/2B FLARE. AT 1200Z ON 3 FEB THE OBSERVED FLUX WAS 75 PROTONS/ CM²/SEC/STER AT SATELLITE ALTITUDES. IF NO NEW PARTICLES ARE RECEIVED, THE PROTON EVENT WILL PROBABLY END LATE TODAY OR EARLY TOMORROW.

0129

III. EVENT PROBABILITIES 04 FEB-06 FEB

CLASS M 90/90/90

CLASS X 50/50/50

PROTON 30/30/30

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 02 FEB 286

ESTIMATED 03 FEB 285

PREDICTED 04 FEB-06 FEB 295/305/310

90 DAY MEAN 02 FEB 198

V. GEOMAGNETIC A INDICES

OBSERVED AFR 01 FEB 036 AP 02 FEB 051

ESTIMATED AFR 02 FEB 050 AFR/AP 03 FEB 025/025

PREDICTED AFR/AP 04 FEB-06 FEB 035/030-050/040-035/030

SOLTERWARN

BT

HXUS BOU 031300

PREDM 09004 09005 09006

PREDX 05004 05005 05006

PREDP 03004 03005 03006

PCAFT 00204

TENCM 29504 30505 31006

AFRED 03504 05005 03506

AFAPF 03004 04005 03006

KKK 44555 43334 56543

BT

END OF BUFFER

HFXS 3 BOU 032200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 034B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 03 FEB 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 03/1200Z TO 03/2100Z: SOLAR ACTIVITY HAS BEEN HIGH. REGION 3583(S18W03) PRODUCED AN M3/SN MAXIMUM 1159Z, ENDING IN THIS PERIOD AT 1208Z. NEW REGION TODAY 3594 (S13E81) PROVIDED AN M2 EVENT MAX AT 1703Z. OPTICAL WAS UNCLASSIFIED DUE TO SEEING. CENTIMETRIC OUTPUT OF 590 F.U. AT 245 MHZ AND 110 AT 2695 MHZ ACCOMPANIED THIS EVENT. UNASSOCIATED M2 EVENTS, MAXIMA AT 1332Z AND 1739Z OCCURRED. AN M5 EVENT WITH AN M2 SECONDARY PEAK, MAXIMA AT 2028Z AND 2038Z WAS ASSOCIATED WITH LOOPS BEHIND THE LIMB AND AN IMPORTANCE 1B FLARE IN REGION 3594. THE 1B WAS ASSOCIATED WITH THE SECONDARY PEAK WAS OBSERVED IN THE LEADER OF 3594. REGION 3576 (S13W35) REMAINS EXTREMELY COMPLEX WITH 3 MAGNETIC DELTAS.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY SHOULD REMAIN HIGH WITH SIGNIFICANT ACTIVITY VERY LIKELY IN REGIONS 3576 AND 3594.

II. GEOPHYSICAL SUMMARY AND FORECAST: GEOMAGNETIC ACTIVITY HAS REMAINED AT ACTIVE LEVELS THIS PERIOD. ENERGETIC PARTICLES AT SATELLITE ALTITUDES CONTINUE ABOVE EVENT THRESHOLDS. FLUXES HAVE DECLINED TO NEAR 30 PARTICLES/SEC-CM²-STER GREATER THAN 10 MEV. THE GEOMAGNETIC FIELD SHOULD RESUME MINOR STORM LEVELS ON 4 FEB DUE TO THE X1/2B FLARE OF EARLY 3 FEB. THE PARTICLE EVENT SHOULD END WITHIN THE NEXT FEW HOURS.

III. EVENT PROBABILITIES 04 FEB-06 FEB

CLASS M 95/95/95

CLASS X 50/50/50

PROTON 30/30/30

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 03 FEB 279

PREDICTED 04 FEB-06 FEB 278/275/270

90 DAY MEAN 03 FEB 198

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 02 FEB 048/051

ESTIMATED AFR/AP 03 FEB 025/025

PREDICTED AFR/AP 04 FEB-06 FEB 035/030-050/040-035/030

SOLTERWARN

BT

HXUS BOU 032200

PREDM 09504 09505 09506

PREDX 05004 05005 05006

PREDP 03004 03005 03006

PCAFAT 00204

TENCM 27804 27505 27006

AFRED 03504 05005 03506

AFAPF 03004 04005 03006

BT